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ISSUES REGARDING THE CONDUCT  
OF HISTORICAL ARCHAEOLOGY  
IN NEVADA

Donald L. Hardesty

Nevada Council of Professional Archaeologists  
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## Chapter 1. INTRODUCTION

Historical archaeology is a vital element of this nation's historic preservation program. While originally more prevalent in the eastern parts of the country, historical archaeology has also been recognized as a vital topic of investigation and research in the western states. The archaeological remnants of historical communities, industrial sites, and ranches are a visually dramatic element of Nevada's cultural landscape. As such they represent a unique set of opportunities to study and better understand our earlier history. In addition, information contained in these sites may be of relevance to much larger questions dealing with human and environmental adaptations, settlement patterning, archaeological site structure and transformational processes, industrialization, urbanization, social organization and change, and the role ethnic groups have played in all of the above facets of life.

Over the last year, many individuals within Nevada's historic preservation community have become concerned at an apparent inconsistency in how historic archaeological sites are being administered. While some sites receive detailed attention, others are allowed to be destroyed or become the cause of heated interagency debates.

A contributing factor to this inconsistent treatment seems to be an uneven awareness and interest in historical resources on the part of archaeologists, historians, administrators, and others involved in cultural resources management. Historical archaeology is a complex and specialized aspect of general archaeology. Many people in the position of affecting the direction of identification, evaluation, and mitigation activities do not have an adequate understanding of historic archaeological methods, research goals, or evaluation criteria. Consequently, they lack the tools needed to adequately assess the

integrity and significance of Nevada's historical resources. As a result, they are unprepared to represent historical archaeology to the private sector, agency management, or the general public.

The Nevada State Historic Preservation plan (Page and Associates 1978) recognizes the need to deal with historic communities, industrial sites, and ranches, but provides little guidance regarding what specific tasks are necessary and how they should be carried out. The archaeological element of the state plan (Lyneis 1982) is more instructive in this regard. Four topics (farming/ranching, urban, mining/industry, and Mormon colonization activities) are discussed and site classifications, criteria for evaluating site significance, and key research questions are provided. The plan does not, however, discuss the myriad other, and more basic, issues regarding the conduct of historical archaeology. Management and operating plans for each topic were not developed, therefore confusion remains regarding treatment and data needs. Bureau of Land Management (1985) guidelines address archaeological surveys, but are largely oriented toward the identification and recordation of prehistoric resources.

In summary, little in the way of information currently exists that cultural resources specialists can use as a basis for making decisions regarding the adequacy of historical archaeology conducted within their area of responsibility.

These problems can be resolved only if all parties involved have a common understanding of the basic tasks that must be accomplished (preservation planning, identification and recordation, and significance evaluation), and an awareness of the issues involved in their proper resolution. State and federal agencies need to review and update regulations and guidelines that control the manner in which historical archaeology is conducted.



The intended audience of the report is the archaeological community at large; the principal, full time participants in cultural resources management. Ours is a wide ranging responsibility. We oversee the management not only of resources for which we have a strong emotional commitment, but also other classes of resources for which we often show less enthusiasm. The resource suffers as a consequence of our disproportionate concern and representation. Each of us must recognize the significance of all classes of cultural resources, familiarize ourselves with those classes we know the least about, and present all cultural resources in a representative manner.

The purposes of this report are three fold. Federal mandates regarding historic preservation are placing more and more emphasis on planning. The first goal of this report is to provide information on the preservation planning process and outline a preliminary state level preservation plan for historical archaeology. The second goal is educational in nature, providing a general introduction as to how the major issues of cultural resources management can be viewed from the perspective of historical archaeology. These issues include inventory procedures and resource significance evaluations. The final goal of the report is to act as a forum for the discussion of historical archaeology, its place in cultural resources management, and how historical sites can best be managed.

Four appendices are included. Appendix A provides a set of guidelines specifically oriented toward historical archaeology. Once discussed and adopted by the State, it is hoped that these guidelines will be adopted by other agencies involved in cultural resources management in Nevada.

The relationship of mining and historic preservation laws, as implemented by the major federal land management agencies in Nevada, will be the subject of the second appendix. Today's miners are returning to old mining districts with new techniques.

Consequently, mining is one of the major activities impacting old, mining-related, ghost towns. It is important for archaeologists and miners alike to understand the legal and procedural framework in which their own particular activities must be undertaken.

Appendix C is a partial bibliography of books, articles, publications, reports, and other documents that address historical archaeology in Nevada. The purpose of this appendix is largely educational, providing an academic resource that will serve to increase general awareness regarding the subject.

A final appendix includes sample forms that can be used in conjunction with historical archaeology, including a building report form, a feature form, and a debris scatter recording form.



## Chapter 2. PREPARING PRESERVATION PLANS

Most historical archaeology in Nevada takes place within the framework of cultural resource management. This is understandable in that most historic sites are on public land and are, therefore, subject to federal regulatory laws and policies. Perhaps the most important is the Historic Preservation Act of 1966, as amended (U.S. Code 80 Stat 915, 94 Stat 728). Several other pieces of legislation have supplemented the Historic Preservation Act in recent years, including the 1979 Archeological Resources Protection Act (U.S. Code 93 Stat 728).

### THE PRESERVATION PLANNING PROCESS

From this legal framework has evolved a number of working plans implemented by federal and state agencies for managing historic properties. Perhaps the most comprehensive are those developed by the U.S. Department of the Interior. These include the early Resource Protection Planning Process (U.S. Department of Interior 1980) and the more recent Standards for Preservation Planning (n.d.) issued by the Secretary of the Interior. Both provide a set of guidelines for the development of comprehensive planning systems that facilitate the identification, evaluation, and treatment of historic properties.

It is imperative that archaeologists understand the preservation planning process. The present direction of the federal historic preservation program is becoming increasingly oriented toward the development and use of such plans. This has come about due to the tendency of cultural resource managers to emphasize inventory at the expense of all other aspects of the management process. The message from the Secretary of the Interior is that while we do not have all the inventory data we

may ultimately want, we have enough information to begin an assessment of that data base. Planning is seen as a means of using the existing inventory data as a means of developing preliminary indications of site distribution and a context for the evaluation of site significance, data needs, and key research questions. Work can then be directed to the areas of greatest need, rather than continuing to acquire more and more information about adequately studied, or trivial, areas.

The federal emphasis on preservation planning has, and will continue to have, a pronounced effect on the manner in which the State Historic Preservation Office conducts business. Future involvement with that office with regard to National Register eligibility determinations, data recovery plans, and the acceptance of reports may well require justification within the context of State and possibly local preservation plans. As archaeologists, we are responsible for representing cultural resources to clients, agency management, and the public. Consequently, we must find ways of incorporating preservation planning into our every day work procedures and agency planning processes.

Historical archaeology in Nevada should be conducted within the context of a comprehensive preservation plan, and should contribute to the continued development and refinement of the plan. It should be recognized at the onset, however, that there need not only be one plan. In fact, a state level plan must be viewed as a framework that facilitates the development of other, more detailed, plans that address the resources in a smaller unit (a community, a mining district, etc.). Such smaller plans would not compete with one another; archaeologists or planners would use the most detailed plan available for the area under investigation. The state plan would be relied on only in cases where no other plan exists.



## ELEMENTS OF A PRESERVATION PLAN

Elements of a comprehensive preservation plan will eventually include the following parts:

1. a narrative historical overview of the area in order to identify the historic context within which historic properties are identified and evaluated;
2. an identification of themes, temporal periods, and geographically defined study units that are relevant to the historical context;
3. an evaluation of existing information about historic properties in each unit by period;
4. the identification of data needs for each study unit by period;
5. the identification of methods to be used to collect the new information about the study units by period; and,
6. a statement of how historians, architectural historians, archaeologists, historical architects, and persons from related disciplines are to be involved in the planning process, along with the public.

The first step in developing a historic sites preservation plan is to delineate the area for which the plan is intended: an individual town, a mining district, a county, an agency district, or the state at large. Following definition of the planning area, an understanding of the historic context for that area should be developed. This should focus on the identification of key cultural themes and concepts that have patterned past human activities, the definition of developmental or temporal periods, and any internal geographical boundaries.

## The Definition of Dominant Cultural Themes

The second step in the preparation of a preservation plan is the development of relevant historical themes. Some themes, such as colonization or the military, are quite general and can be broken down into more specific key or "thematic" patterns (Mormon colonies and munitions storage, for example). These patterns can then be translated into site types and spatial arrangements. Feature systems (see Chapter 3) are the physical representation of the site types, and provide the archaeologist with a viable analytical unit that links site types to observable data.

A series of dominant historical themes are presented below that cover the portion of Nevada's history of most direct relevance to historical archaeology. These were identified on the basis of general contextual history. They include:

1. mining and milling;
2. farming and ranching;
3. transportation and communication;
4. ethnicity and ethnic relations;
5. settlement; and,
6. military.

What historic sites are likely to exist, where they are located, the kinds of information they are likely to contain, and any "heritage value" they may hold will revolve around these themes.

It would be possible to identify any number of other themes. For example, a series of cultural themes have been identified by Judd (1985) in an amendment to the Nevada Historic Preservation plan. Many, such as Hoover Dam, recreation, and marriage and divorce, are not included as dominant themes for historical archaeology, even though they are relevant to the overall State preservation planning effort.



## The Definition of Temporal Units

The third step is the definition of time periods. Historical chronologies vary somewhat from region to region within the state, but general time periods can be defined that have state-wide applicability (after Hulse 1981), including:

1. Period of Exploration (1827-1850);
2. Period of Colonization (1850-1859);
3. Early Bonanza (1859-1881);
4. Depression (1881-1900);
5. Late Bonanza (1900-1915);
6. Transportation and Federalism (1915-1931);
7. Gaming and Tourism (1931-1950); and
8. Recent (1950-present).

At the smaller scale of the mining district, Bowers and Muessig (1982:39-43) define developmental stages typically experienced within a district, including:

1. discovery;
2. exploitation, and possibly abandonment;
3. consolidation and the development of industrialized mining;
4. decline; and,
5. abandonment (or revival).

During recent work in the Rochester mining district, located in Pershing County, Zeier (1986) assigned dates to these stages thereby converting them into temporal periods that would be useful for resource management planning in the Rochester mining district.

## The Definition of Geographic Units

Planning areas are seldom homogeneous. Rather, they exhibit variation in landscape features such as slope, aspect, access to water, vegetation, and other resources. The ideal location for one person, say a logger, may not be looked on with favor by another, say a miner. Consequently, the spatial mosaic should be divided into smaller, more homogeneous study units.

This division may be accomplished in a number of ways. First, they may be based on historically documented land use patterns. In this case, each study unit is defined to be as internally homogeneous as possible, while still being unique. The mining district is an example. Such districts are social and cultural units within which extractive industries experienced common technological problems brought about by similar geological environments, accessibility to energy, materials, and information (Edaburn 1982:235). The mining district is the social hub of the region and is linked into the national and international scene through world systems as defined by Wallerstein (1974). Cultural themes can be defined for mining districts and other geographic units. Hardesty and Firby (1980), for example, identify several themes for the Comstock Mining District of western Nevada, including mining, milling, urbanism, ethnic groups and ethnicity, and traditional Native American foraging. Each theme is presumed to have left an archaeological imprint upon the landscape, an imprint whose geographical pattern can be predicted.

Geographical units may also be defined arbitrarily. For example, the study units used in the state wide plan could be the counties, or BLM districts. Arbitrary definitions are usually employed as an expedient means of incorporating the preservation planning process into some existing, higher level management program, be it state government or a federal agency.



The final means of defining study units is through some systematic means; grid units, for example. This method should only be used if nothing is known about an area after having conducted literature reviews and the geography of the area is such that geomorphic subdivisions are not readily apparent.

## THE CONTEXTUAL MATRIX

The definition of historic themes, chronology, and geography make it possible to construct a "contextual" matrix for historic sites (Figure 1). The matrix is a heuristic device that allows for the isolation of key research domains and research questions for evaluating historic site significance. Each relevant cell of the matrix has a unique evaluative structure. In addition, a set of expected site types is associated with each cell. This matrix includes cells that are not relevant. For example, the exploration theme has little relevance beyond the periods of exploration and colonization. It is necessary, therefore, to determine which cells are worthy of immediate planning.

It is important to recognize that the cultural resources deemed significant according to the National Register criteria will change from one time period to another, from one theme to another (e.g., exploration is replaced by mining), or as one theme "transforms" cultural resources from one type or style into another over time (e.g., the pan amalgamation technology is replaced by the cyanide leaching technology).

## PRELIMINARY OPERATING PLAN

An operating plan details a practical program for managing the historical resources in a study unit. A preservation plan,

Use of Space								
Evolution in Form								
Chronology								
Evolution in Style								
Ethnicity								
Geography								
	Sod or Dirt Roof	Rubble Rock	Dugout	Wattle and Daub	Wooden Mass Walls	Brick	Adobe	Cut Stone Wood Frame

Figure 1. Contextual matrix for historical archaeology in Nevada.



then, would include an operating plan for each of the identified study units. Each plan should include three categories of information. First, inventory related issues must be discussed. These include the amount of previous research, expected site types and site locations, and any known data gaps. Second, site evaluation must be addressed, specifically the prioritization of research questions and significance evaluation standards. Finally, resource protection must be considered.

The preparation of thorough operating plans for each study unit is outside the scope of this document. However, a brief sketch of the dominant themes in Nevada's history is provided. Each theme is organized into the chronological periods defined above and discussed in terms of several "thematic patterns" that lead directly to expectations about site types, locations, and significance of historical properties.

#### Settlement Themes (Table 1)

The first Euroamerican settlements in what is now Nevada were temporary trail camps established by fur trappers during the Exploration Period (1826-1850). In 1826, Peter Skene Ogden, a trapper for the Hudson's Bay Company, appears to have entered the extreme northern part of the State; two years later he returned, discovering the Humboldt River. Jedediah Strong Smith, another trapper, traveling through southern Nevada in 1826 and 1827. Fur trappers continued to explore the state for the next twenty years, but it was not until John Charles Fremont's military expedition in 1844 that a major mapping effort was launched.

The temporary trailside camps of the earliest explorers were supplemented after 1841 by emigrant parties passing through the state on their way to California and Nevada. Perhaps the first of these is the Bartleson-Bidwell party, which traveled along the

Table 1. Settlement Themes.

Thematic Pattern	Significant Time Period	Inventory and Research Questions
1. Trail settlements	Exploration, colonization	Trail culture, site types, spatial pattern, chronol.
2. Mormon colonies	Colonization	Mormon culture, site types, spatial pattern, ethnicity, household status
3. Prospectors	Colonization-Late Bonanza	Prospector culture, site types, spatial pattern, ethnicity, household status
4. Rural farmers	Colonization-Late Bonanza	Farming culture, site types spatial patterns, ethnicity, household status
5. Boomtowns	Early Bonanza, Late Bonanza	Frontier urban culture, site types, spatial pattern, ethnicity household status
6. Intensive Farming settlements	Early Bonanza- Early Gaming	Site types, spatial pattern, ethnicity, household status

Humboldt River, the Carson River, the Walker River, and across the Sierra Nevada by way of Sonora Pass in 1841. The ill-fated Donner party passed through Nevada late in 1846, and a large number of other emigrant wagon trains added to the archaeological record of the state's trailside settlements in the 1840s. Both the southern Death Valley emigrant trail to California and the northern trails to California and Oregon, including the Humboldt-Carson trail and the Applegate-Lassen cutoff, were used.

The first permanent Euroamerican settlements in Nevada were established during the Colonization Period (1850-1859). Between



the years of 1851 and 1857, the Carson Valley and the Washoe Valley were colonized by Mormon emigrants; farm-villages were set up first at Genoa and later at Franktown. Somewhat later, between 1855 and 1858, another Mormon settlement was established in the Las Vegas Valley. Although both settlements were abandoned by the end of the decade, a second wave of Mormon colonists entered southern Nevada a few years later in the Colorado River Basin. Here, new farm-village settlements were started in the 1860s, in the late 1870s and 1880s, and around the turn of the century.

But miners also were establishing permanent settlements during the Colonization Period. Gold was discovered in the placer gravels of Gold Canyon near Dayton in 1850, and for the rest of the decade, miners explored the area. A few fairly large camps emerged, but mostly the miners lived in isolated cabins next to their claims. Mormon farm-villages and the rural cabins of placer miners were the two principal settlement types of this period, supplemented only by a few "way stations" servicing the wagon trains passing through on the emigrant trails. Jamison Station in the Truckee Meadows was typical of these.

In 1859, the discovery of the Comstock Lode marked the beginning of the Early Bonanza Period (1859-1881) and revolutionized settlement patterns in Nevada. The "boomtown" was the key settlement type of this period, supported by a local hinterland of farms and a railroad "pipeline" bringing in commodities from all over the world. Virginia City and the towns of Gold Canyon were the earliest and largest examples of the new settlement system. Other boomtowns of the Early Bonanza Period included Austin, Eureka and Ruby Hill, Hamilton and Treasure City, Pioche, and Candelaria.

Unlike the early Mormon farms which were small, organized into families, and self-supporting, the boomtowns were large, mostly inhabited by adult males, cosmopolitan, and dependent upon

"world systems" for goods and services. The early Mormon colonies and the boomtowns did have one thing in common, however: both were often short-lived. Boomtowns were especially susceptible to dramatic "boom-bust" fluctuations due to their dependence on a mining economy.

During the Early Bonanza Period, several other types of settlements emerged. The building of large-scale railroad and road networks to supply the boomtowns created "linear" arrangements of transportation related towns, hamlets, and isolated stations. Small, outlying mining camps continued to be associated with prospecting, placer mining, and small-scale lode mining.

No significant changes in this pattern took place until the development of large-scale federal water projects during the Transportation and Federalism Period (1915-1931), and later. The Newlands Reclamation Project in western Nevada, for example, created Fallon, a new, planned town in the Carson Sink, along with a large number of farms watered by the new irrigation network. Rye Patch Dam on the Humboldt River (1937) had similar consequences for the Lovelock valley. The completion of Hoover Dam (1935) and Davis Dam (1953) drastically changed settlement patterns in southern Nevada. New towns such as Boulder City were established, the growth of Las Vegas was stimulated, and a new tourism-oriented economy was established. The development of large federal military projects in the Early Gaming and Tourism Period and later had similar consequences.

#### Ethnicity and Ethnic Relations Theme (Table 2)

The first Euroamericans to enter Nevada encountered indigenous Paiute, Shoshone, and Washoe people. Early Indian-White relationships were strained, and occasionally resulted in



Table 2. Ethnicity and Ethnic Relations Themes.

Thematic Patterns	Significant Time Period	Inventory and Research Questions
1. Native American culture	Exploration-Late Bonanza	Acculturation, site types, spatial pattern, ethnicity
2. Chinese culture	Early Bonanza- Depression	formation of Chinese-American culture, site types, spatial pattern, ethnicity, acculturation
3. Basque culture	Early Bonanza- Recent	Formation of Basque-American culture, site types, spatial pattern, ethnicity, acculturation
4. Italian culture	Late Bonanza- Recent	Formation of Italian-American culture, site types, spatial pattern, ethnicity, acculturation
5. Mexican culture	Colonization-Early Bonanza	Formation of Mexican-American culture, site types, spatial pattern, ethnicity, acculturation
6. American Black culture	Early Bonanza-Late Bonanza	Formation of Post-bellum American Black culture, site types, spatial pattern, ethnicity

an outbreak of hostilities, as with the Paiute War of 1860. By the Early Bonanza Period, however, Native Americans in Nevada entered a period of rapid cultural change, bringing about the formation of a new non-traditional pattern. Reservation life, urban foraging, and wage labor were some of the major changes that revolutionized Native American lifestyles in Nevada during the nineteenth and early twentieth centuries.

The material correlates of historic Native American ethnicity are both architectural and related to household and

personal behavior. Studies of Native Americans in Virginia City during the Early Bonanza Period, for example, suggest that they continued to live in traditional domed wickiups or campoodies at the eastern edge of the city and used many traditional tools. But they also used "western" materials such as iron pipe and canvas to build the wickiups, adopted some western clothing, and made tools out of western materials such as glass and metal. Similar observations have been made for the historic Grass Valley Shoshone.

Another important ethnic group in Nevada's history was the Chinese. Mostly coming from the Kwantung Province of southern China, the first Chinese emigrants arrived in Gold Canyon in the 1850s and worked placer gravels or in related jobs. In the Early Bonanza Period, large Chinese enclaves were formed in Virginia City, Gold Hill, and other Comstock communities. Chinese settlements also were established in most other boomtowns, including Austin, Eureka, and Candelaria. Here, they worked in a variety of occupations: running restaurants, laundries, and stores; working urban gardens; selling firewood; working as domestics and day laborers; and mining placer gravels, among others. In the Cortez Mining District of central Nevada, they worked as hardrock miners.

Most Chinese households in nineteenth century Nevada were groups of adult males; few families were present. They lived and worked in a quite restrictive social and economic environment, excluded from hardrock mining by the worker's unions in most places, forced to live in an urban ghetto or on the outskirts of town, and subjected to social abuse. As a group, the Chinese changed relatively slowly, in part because of a close sense of ethnic identity probably brought about by the restrictive social environment in which they lived. Most of the Comstock Chinese community had vanished by the Depression Period, but a few Chinese enclaves remained in large towns such as Reno well into the twentieth century.



The material correlates of Chinese ethnicity are reasonably well known. "Clustered" housing is common, and the household furnishings are distinctive, including imported Chinese pottery tableware and food containers (especially such ceramic types as Swatow, Four Seasons, Double Happiness, Celadon, and the ubiquitous brownware). In addition, the opium complex is often associated with Chinese archaeological sites. Many "western" artifacts are included in the assemblage as well, especially things such as kerosene cans, axes and other hand tools, food tins, and the like.

The third major ethnic group in Nevada's history was Mexican. Arriving in the Gold Canyon area with the discovery of gold in 1850, Mexican miners played an important role in the early development of the Comstock Lode. Virginia City had quite a large Mexican community as late as 1870, apparently living in the area of Seven-Mile Canyon. The 1880 federal population census, however, suggests that the community had largely disappeared by then.

Little research on the material correlates of Mexican ethnicity has been done. However, it is likely that some household artifacts may be distinctive, including grinding stones and majolica pottery. More frequent use of adobe in house construction also may be characteristic but is not unique.

American Blacks make up another important ethnic group in Nevada, albeit rather invisible until the Recent Period. Virginia City, for example, had a community of about 90 Blacks during the Early Bonanza Period. They owned small businesses, such as barber shops and boot-blackening shops, and worked as teamsters, laborers, and in a variety of other occupations. They mostly lived in second-story apartments downtown on "C" Street. The material correlates of Black ethnicity in the Postbellum West, however, have not been studied.

Italian and Basque emigrants are the remaining two ethnic groups that may have some archaeological visibility. The major period of Italian emigration into Nevada was the Late Bonanza, the early part of the twentieth century; however, some Italians were here earlier, at least back to the Early Bonanza Period on the Comstock. Most of the later emigrants engaged in farming activities and carried with them a distinctive architectural complex - two story stone or brick buildings in the southern Mediterranean style associated with outdoor hive-shaped baking ovens. Some archaeological evidence of the same complex has been found at Shoshone Wells in the Cortez Mining District.

Basque emigrants arrived at least as early as 1859 in Nevada; many took up sheep herding. Most of the material correlates of Basque ethnicity are unknown, but "aspen art" is one of the more visible features associated with carved Basque names. Archaeological study of the Basque sheep camps in the nineteenth and early twentieth centuries is one of the more pressing research problems that should be pursued.

#### Farming and Ranching Theme (Table 3)

The first Euroamerican farmers in Nevada established themselves early in the Colonization Period to service the emigrant trails to California and Oregon. Several small farmers in the Truckee Meadows and the Carson Valley, for example, sold hay, meat, and butter to passing emigrants in the 1850s. Many of the first farmers came with the Mormon colonization of western and southern Nevada during this time.

What Townley (1983:115) calls a "hay culture" emerged during the Early Bonanza Period in the Truckee Meadows and other places catering to the mining boomtowns or in pivotal positions in the transportation network. The farmers cut the wild stands of grass



Table 3. Farming Theme.

Thematic Pattern	Significant Time Period	Inventory and Research Questions
1. Hay culture	Colonization-Early Gaming	Early hay culture, settlement pattern site types
2. Cattle Ranching	Early Bonanza-Early Gaming	Early ranch culture late ranch culture, settlement pattern site types
3. Urban farming	Early Bonanza	Settlement pattern ethnicity, site type
4. Sheep herding	Early Bonanza- Early Gaming	Ethnicity, sheep herding culture, settlement pattern site types
5. Dairy farming	Colonization Present	Dairy farm culture, settlement pattern site types, ethnicity
6. Homesteading	Late Bonanza-Early Gaming	Homestead culture, settlement pattern site types
7. Truck farming	Early Bonanza- Present	Settlement pattern site types, environ. impacts

on the valley floors and sold it to the teamsters supplying the large towns as feed for oxen, mules, horses, and other animals used for hauling freight. Construction of the first railroads in the late 1860s and 1870s ended some of the demand for animal power; however, the hay culture continued to thrive by shifting to the feedlot industry. Here, hay was grown for the purpose of fattening ranch cattle just prior to their being shipped to California market on trains. In the last decade of the Early Bonanza period, the "foraging" foundations of the hay culture was weakened by decreased yields and greater demand. The introduction of new cultigens such as alfalfa, land reclamation techniques, fertilization, and irrigation created a new foundation. During the following Depression Period, the new

foundation was further developed. Among other things, the change involved a move of hay fields to higher river terraces with dry, gravelly soils away from low-lying river bottoms favored by the native grasses.

Ranching was another farming pattern that emerged in Nevada during the Colonization Period. Both cattle ranching and sheepherding are included in the pattern. As early as 1851, a herd of sheep was driven from California into the Carson Valley. During most of the decade, ranchers from California drove cattle and sheep into the Carson Valley and the Truckee Meadows for winter grazing. By the Early Bonanza Period, ranching was well established. But it was the completion of the transcontinental railroad that created a ranching "boom" in Nevada. Cattle and sheep were raised to a marketable age on the range, driven to rail heads such as Reno for feedlot fattening, and then shipped via boxcar to markets in California and, later, eastward to Omaha. During the Early Bonanza Period and into the Depression Period, ranches were small and relatively numerous. By the 1890s, however, episodes of severe winters, overgrazing, and market saturation forced many ranchers out of business. The early twentieth century saw the emergence of a new ranching pattern, dominated by a few very large ranches.

Sheepherding had a somewhat parallel history, emerging on a large scale as early as 1859 when the Spanish Ranch in Elko was started by the Basque emigrant Pedro Altube. Sheepmen, many of whom were Basque, followed a transhumance pattern in moving their herds between high summer ranges and winter pastures on the valley floors, often in direct competition with cattle ranchers. The archaeological expectations for the ranching pattern includes a geographical pattern of transhumance; some distinctive ethnic groups such as the Basque; a nucleated "home ranch" with outlying line camps and other temporary camps used for branding, round-ups, and the like; and railroad shipping sites.



Intensive farming is the third agricultural pattern that can be recognized in Nevada's past, with several variants including urban farming, truck farming, and dairy farming. The pattern centered around truck gardens (e.g., potatoes), garden vegetables, fruit orchards, and dairy cattle. All were raised on small plots with the use of irrigation and fertilization techniques. Mormon farm-villages established the pattern during the Colonization Period. The mining boomtowns of the Early Bonanza Period, however, provided the key stimulus for its elaboration; Italian, Chinese, Swiss, and German farmers, among others, supplied much of the food consumed by miners. On the Comstock, for example, the Carson Valley, Washoe Valley, the Truckee Meadows, and the small urban gardens of the Virginia City Chinese community made up a substantial agricultural hinterland.

In some places, including the Truckee Meadows, the Depression Period was a major period of expansion for intensive farmers, as the bottom fell out of the hay culture, and ranching markets and new farming strategies were explored. The large Italian emigration during the Late Bonanza Period further expanded the pattern of small, intensive farms in Nevada.

#### Military Theme (Table 4)

In 1844 John Fremont's Army Topographical Corps expedition to Pyramid Lake and beyond became the first Euroamerican military presence in Nevada. Other early military expeditions for the purpose of exploration included one led by James Simpson (1859) to locate a new "central overland route" across Nevada, most of which was used by the pony express in 1860 and 1861. During the Early Bonanza Period, the U.S. Army established Fort Churchill on the Carson River in 1860. The fort was both a supply base at the edge of the frontier and a garrison intended to prevent hostilities between the indigenous Native American and the

Table 4. Military Themes

Thematic Pattern	Significant Time Period	Inventory and Research Questions
1. Frontier expansion	Exploration-Early Bonanza	Frontier military culture, site types, spatial pattern
2. Munitions storage	Trans/Federal-Early Gaming	Social impacts on state and region, site types, spatial pattern
3. World War II Training	Early Gaming	Social impacts on state and region, site types, spatial pattern
4. Weapons testing	Contemporary	Social impacts on state and region, site types, spatial pattern

intrusive Euroamerican settlers. Built partly in response to the Pyramid Lake and the Paiute "wars" of 1860, Fort Churchill was abandoned in 1869 as the frontier rapidly moved eastward.

Not until the early twentieth century was there another substantial military presence in Nevada. The U.S. Navy built a large munitions storage depot at Hawthorne in 1930. During the Second World War, several military training bases were constructed, including Nellis Air Force Base near Las Vegas, Stead Air Force Base near Reno, Fallon Naval Air Station, and the Army Air Base at Tonopah. All of these projects had a substantial social and economic impact upon the state of Nevada. The military continues to play an important role in twentieth century Nevada into the present period.



Transportation and Communication Theme (Table 5)

The history of transportation and communication reflects changes in how Nevada was linked to the outside world. Starting with the Exploration Period and continuing well into the Early Bonanza period, animal-powered vehicles were used for freighting, passenger transport, and communication. Oxen-drawn wagons, mule trains, horse-drawn stagecoaches, and the like brought emigrants and their supplies into the State over an emerging network of overland trails. The trails, remnants of which are still visible, were serviced by way-stations, many of which also remain today either as standing buildings or as archaeological sites.

Table 5. Transportation/Communication Theme.

Thematic Pattern	Significant Time Period	Inventory and Research Questions
1. Trails transport	Exploration- Colonization	Trail cultures, spatial pattern site types, pony express and stage station culture
2. Telegraph	Early Bonanza	site types, technology, spatial pattern
3. Railroads	Early Bonanza-Late Bonanza	Railroad culture, site types, spatial pattern
4. Telephone	Depression-Late Bonanza	Site types, technology, spatial pattern
5. Automobile	Late Bonanza-Trans/ Federal	Car culture, site types, spatial pattern
6. Airplanes	Trans/Federal-Early Gaming	Air culture, site types, spatial pattern

Until the fall of 1861, communication flowed along the transportation route. Mail was carried by wagons or by pack animals, although a short-lived experiment with the "pony express" was tried for urgent messages in 1860 and 1861. In 1861, however, the first transcontinental telegraph line was completed. Most bulk mail continued to take the slow overland route, but urgent messages could now be sent by wire. The telegraph was supplemented by the telephone starting with the Depression Period, starting a new era of mass communication. Archaeological vestiges of early telegraph and telephone systems in Nevada still remain in some places.

The completion of the transcontinental railroad in 1869 opened a new era in transportation and communication. Freight, passengers, and mail could be carried much faster and in larger quantities than with animal-powered vehicles. The railroad encouraged the development of both ranching and mining in Nevada; Late Bonanza Period mining in southern Nevada, for example, was largely dependent upon expansion of railroads into this area. Significant archaeological traces of railroad systems from the Early Bonanza period through the Late Bonanza Period are still visible in many areas. The archaeological record includes rails and ties, grades, tunnels, trestles, drainage systems, rolling stock, roundhouses, way-stations, water tanks, and section houses, among other things.

Despite the statewide network of railroads, local transportation of freight, passengers, and mail continued to be based upon animal power at least into the Late Bonanza Period. Technological advances in the early twentieth century that made the automobile accessible to the public, however, changed all that. By the Transportation and Federalism Period, the construction of paved roads throughout the state revolutionized public transportation. It also created a new "social order" complete with new linear settlement patterns along the automobile roads and new types of activities, buildings, and settlements:



motels, gas stations, and tourism. The era of animal-powered transportation had come to an end.

The airplane brought about the last transportation/communication revolution in Nevada's past. By the Early Gaming Period, the technology of human flight had advanced sufficiently to make it practical on a large scale for freight, passenger, and mail transport. As a result, Nevada's landscape from the period to the present were increasingly marked by airports and other related properties.

#### Mining and Mining Related Theme (Tables 6 and 7)

Along with ranching, mining has been the dominant theme in Nevada history. With the discovery of gold near Dayton in 1850, placer miners began working the gravels of Gold Canyon and Six-Mile Canyon, moving upward toward Virginia City. The mining history of the Colonization Period, therefore, was patterned by "low tech" prospector society. Low-cost tools (long toms, rockers, and pans) were used by individual miners to recovery small amounts of free gold uniformly distributed in the gravels.

The discovery of the Comstock Lode in 1859 changed both the technological and social correlates of mining (Hardesty 1986). In the beginning, small "open pits" were used to expose the ore body. But it was soon clear that the deeply buried ore body could be mined only with the help of large and expensive machines, demanding both industrialization and capitalization. An inequalitarian social order, with "great differences in wealth, social status, and living conditions" rapidly emerged during the Early Bonanza Period on the Comstock. The industrial technology used or developed on the Comstock became the world standard for deep mining; the "high tech" tools included large Cornish pumps for draining water from the mines, air compressors

Table 6. Mining Themes.

Thematic Pattern	Significant Time Period	Inventory and Research Questions
1. Low tech placer mining	Colonization	Ethnicity, low tech site types, spatial pattern
2. Low tech mining	Colonization-Early Bonanza	Site types, spatial pattern, low tech variability/change
3. High tech/ industrial lode mining	Early Bonanza	Industrialization site types, spatial pattern, high tech. variability/change
4. High tech placer mining (Dredging)	Depression-Early Gaming	Mechanization, site types, spatial pattern, high tech variability/change
5. Reworking tech	Depression-Contemporary	High tech variability/change, site types, spatial pattern

for running mechanical drills, ventilating fans, and massive steam engines for hoisting miners and equipment.

Both the industrial technology and the social order of the Comstock were imported into other mining districts in Nevada and elsewhere. The Early Bonanza Period was marked by such industrial mining patterns in Austin, Eureka and Ruby Hill, Hamilton and Treasure City in White Pine County, Candelaria, and Pioche, among others. The industrial mining pattern was continued off and on to the present, modified with a series of technological innovations. The source of power, for example, changed from steam boilers to electricity by the end of the nineteenth century.



The Depression Period saw a shift away from deep lode mining in many areas. Mill tailings and mine waste dumps were "mined" and reworked with more efficient milling technologies. Placer gravels were mined on a large scale with the use of power dredges, and by the Late Bonanza Period, large power shovels, tractors, and trucks were used to work "open pit" mines, a practice that has continued to the present. Underground mining continued in some places but became less and less common during the twentieth century.

Milling is closely associated with mining but is treated here as a separate theme because of the distinctly different cultural resources involved. The low tech pattern of Colonization Period mining was repeated in the methods used for processing ore. Simple arrastras were brought from Mexico and South America via the California gold fields. Patios were added to mill the intractable Comstock silver ore in the early part of the Early Bonanza Period. Both tool systems were low cost and could be operated by individuals or small groups using animal or water power.

The high tech pattern of mining during most of the Early Bonanza Period was repeated in milling as well. Pan amalgamation was made workable on a large scale and industrialized, requiring massive steam power, labor, capitalization, and the use of factory-manufactured, standardized tools. As with mining systems, the industrial milling pattern was developed on the Comstock and adopted by other mining districts in Nevada during this period. The pattern was continued into the Depression Period but with a major shift away from pan amalgamation milling toward leaching.

In the 1880s, early leaching systems such as the Russell Process were installed at some Nevada mills, including the Tenabo Mill in the Cortez Mining District. By the 1890s, the first cyanide leaching systems had been installed. Cyanide leaching

Table 7. Milling Theme.

Thematic Pattern	Significant Time Period	Inventory and Research Questions
1. Low tech arrastra/ patio milling	Colonization	Low tech variability/ change, site types, spatial pattern
2. Industrial pan amalga- mation	Early Bonanza- Depression	Industrialization, tech variabil- ity/change, site types, spatial pattern
3. Early leaching systems (Russell)	Depression	Industrialization, tech variabil- ity/change, site types, spatial patterns
4. Smelting systems	Depression	Industrialization, tech variabil- ity/change site types, spatial patterns
5. Cyanide leaching systems	Depression-Late Depression	Industrialization, tech variabil- ity/change, site types, spatial spatial patterns

mills had become the standard by the Late Bonanza Period. The cyanide technology remained dominant throughout the twentieth century, with some changes such as experimentation with flotation cells in the 1920s and the widespread adoption of the low cost "heap leaching" system after the 1970s.



### Chapter 3. INVENTORY RELATED ACTIVITIES

Inventory is an all inclusive term that incorporates the initial discovery of a resource, the description of its constituent elements, and the identification of any relationships between resources. We must recognize that the field survey is but one aspect of the inventory process. Other sources of data are available and can play a central place in a comprehensive inventory. These include written histories; diaries; local, county, state, and federal records (e.g., tax records, voting records, school records, census data, deed books, and vital statistics data); early topographic, insurance, and exploration maps; photographs; technical journals; and many others.

Given the abundance of historical data sources, the non-field related aspect of inventory takes on a greater emphasis in historic as compared to prehistoric archaeology. For this reason, documentary research should be completed before field work begins. Documentary data can be used to build site type and locational models for the study area. Further, thematic patterns identified in the contextual history lead to the development of relevant significance criteria and research questions.

Three principal issues related to the inventory process are discussed in this chapter. The first is the development of documentary models of historic land use. These models are of particular value in planning field activities, especially for projects that involve large parcels rich in historic resources, or in poorly documented areas where numerous small scale surveys are planned. The second issue is in-field recordation of historical buildings, structures, features, and objects. Artifact collection is the subject of the third and final section.

## DEVELOPMENT OF DOCUMENTARY MODELS

The cultural landscape was created by patterned behavior. Documentary models simulate the processes that created a particular landscape as it existed at a particular place and time. Once developed, these models predict historic site type locations. As such, they are powerful tools in structuring inventory activities, in giving substance to significance evaluation activities, and in developing comprehensive planning documents. They provide a link between a necessarily general contextual matrix and the archaeology of a particular locale.

### Activity Models

How historic buildings, structures, and features are classified; their location; and their historical context within a study area are interrelated. The human activities implied by the contextual matrix suggest how historical properties were used at particular points in time and where they are most likely to be located. That is, they have functional and geographical patterns structured by cultural behavior. Activity oriented predictive models can be built based upon such patterns and used as a key inventory tool. What follows from the model is a classification of building types based upon spatial and use-related (function) assignments; what kind of human activities took place in the buildings located in a particular area.

The Comstock model of land use patterns is an example of an activity model. Hardesty and Firby (1980) identified the distribution of geological faults, placer gravels, and water as the key determinants of historic site type and site location. Two major faults (the Comstock and the Silver City) and several minor ones had been mineralized during the late Miocene and



contained vast deposits of gold and silver. Placer gravels were deposited in Gold Canyon, Six-Mile Canyon, American Flat, and the Carson River Valley by subsequent erosion of the faulted area. Documentary records suggested that past human activities on the Comstock were closely tied to these geological structures. In the 1850s and from the 1890s to the 1930s, the placer gravels were mined. After the Comstock strike in 1859, the deep ore bodies of the faults were mined as well, especially from the 1860s into the 1880s. Mills to process the silver and gold ores were built wherever water could be found (mostly Gold Canyon, Six-Mile Canyon, the Carson River "canyon," and Washoe Lake) and as close to the mines as possible.

From this model, a set of predictions was made about which historic site types would be present and their location during each of three time periods in Comstock history. Surveys were then conducted in the vicinity of faults, placer gravels, and water sources (see, for example, Hardesty 1980) to test the predictions (Figure 2). Similar approaches to inventory planning have been used at Cortez Mining District (Hardesty and Hattori 1982) and the Eureka Mining District (James et al. 1985).

Functional, or activity, models such as this are common in urban geography and sociology and in economic geography. The urban ecology model of Hawley (1950) and his intellectual descendants, for example, is especially well suited for predicting building uses and their locations in towns and cities. Concentric circles of buildings used for industrial, commercial, and residential activities are part of the model. A somewhat similar historical model is used by James et al. (1985) to make predictions about expected building uses in the archaeological and architectural record of Eureka, Nevada. The usefulness of this type of model is, however, limited to particular study units.

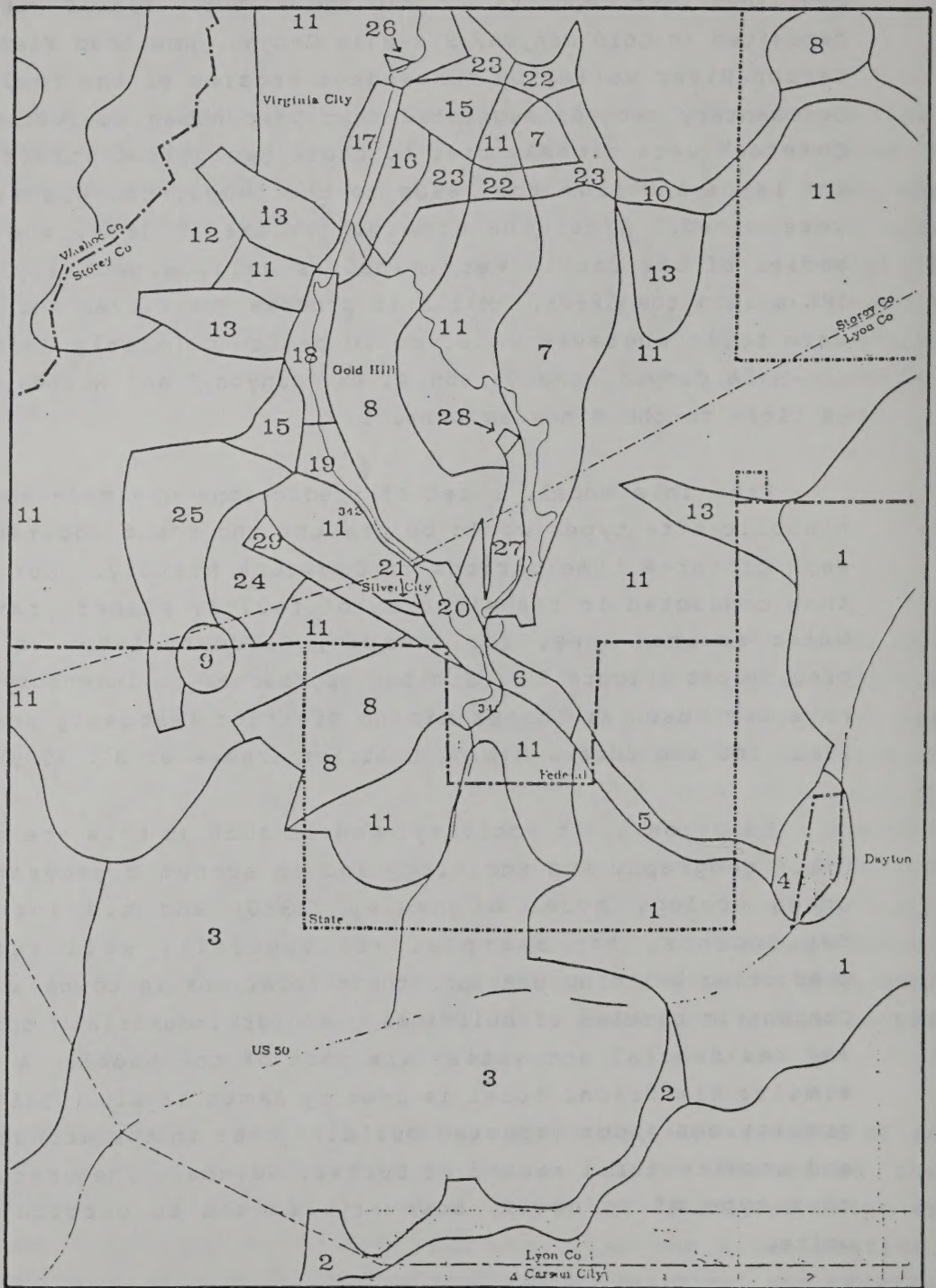


Figure 2. Comstock area preservation plan land use model (after Hardesty and Firby 1980).



## Non-Activity Models

Several "non-activity" models of building types and locations are also available. These center around the classification of construction methods, building form, and building style. In many ways, these approaches are preferable to use-related classifications; while form can be directly observed, use or function must be inferred.

The use of construction types to categorize buildings (e.g., Kensler 1982; Bowers and Muessig 1982) can lead to specific questions about building locations. For example, what is the relationship between building types and the geographical distribution of building materials such as wood, stone, or clay? Perhaps construction types can be predicted by knowing where particular building materials occur and where they don't.

Since form is likely to be associated with building use, this may be the most useful method of developing archaeological types that can be directly observed in the field and used for inferring behavioral categories. The form of industrial buildings is particularly susceptible to this kind of analysis. For example, pan amalgamation mills used for processing gold and silver ores in the late nineteenth century were arranged along steep hillslopes to take advantage of gravity in moving materials from one step in the milling process to another. Exactly where interior rooms are situated in this plan allows accurate inference of what occurred there.

For the most part, stylistic analyses have been used for the classification and evaluation of "high style" architecture - Italianate, Gothic Revival and other national and international architectural styles usually associated with towns and cities. The work of Glassie and other "structuralists" should be considered in developing stylistic models and classifications of

vernacular buildings (e.g., Glassie 1975). Building "grammars" may be quite useful in grouping together historic buildings and in identifying key research questions about the human mind.

### Steps Involved in Building Documentary Models

Historic sites are patterned by such cultural and natural features as roads, ore bodies, proximity to "gravity centers" (e.g., towns), and the like. Water is usually not a key determinant of site location, although farming sites are often situated next to springs or streams. Accordingly, the first step in developing a model is to identify the general principles of land use that patterned past human activities in the area. An adequate understanding of the historical context is needed to suggest what those principles may be. For purposes of this discussion, context originates in the association of an area with the historical themes and time periods described for Nevada in the previous chapter.

The next step is to conduct documentary research sufficient to identify specific historical variables affecting site location patterns, that define additional cultural strata that should be sampled, or that identify distinct areas that should be surveyed. Roads and settlements appearing on historic maps, for example, are clues to how survey patterns can be defined and stratified in the field. Initial on-the-ground surveys should be directed toward documented sensitive strata.

Townsite plats are an excellent means of reconstructing the original layout of buildings, structures, streets, and other archaeologically visible features [the word model cannot be too strongly stressed; town plats do not necessarily correspond to the actual layout of the town]. Townsite or Sanborn fire insurance maps can be used as overlays to define archeological



survey strata in large town sites, if the historic documents can be tied to the site datum (Figure 3). Both standing buildings and archaeological features located during field surveys can then be plotted and related to historically documented buildings.

Such an approach is essential if written documents such as tax rolls and census records are to be tied to specific sites and used together with archaeological data for the study of household composition and consumption patterns. Correlating archaeological features to buildings documented in the written record, however, is not an easy task. Historical maps, for example, provide no more than a "time slice" glimpse of the once living, and changing, community. Buildings showing up at one time may have been modified, destroyed, or replaced during later time periods. The archaeological record, and still-standing buildings, reflect a composite of the community's history, often making it difficult to separate earlier from later activities that occurred in the same place. At the same time, careful archaeological examination, especially in terms of features and feature-systems, often makes such a separation possible.

Another approach to the inventory of large historic sites is to sample the universe of archeological features that are visible on the ground. Large scale aerial reconnaissance; ground based geophysical prospecting for buried pits, foundations, and the like; or other "remote sensing" technique can be used to provide planning data on the kinds and locations of archeological features. Classifying the features that have been identified into separate strata makes it possible to survey a sample of each kind. For example, low-altitude aerial photographs may show several distinct feature types, such as:

1. small building foundations;
2. large building foundations;
3. trash scatters;
4. mine shafts;

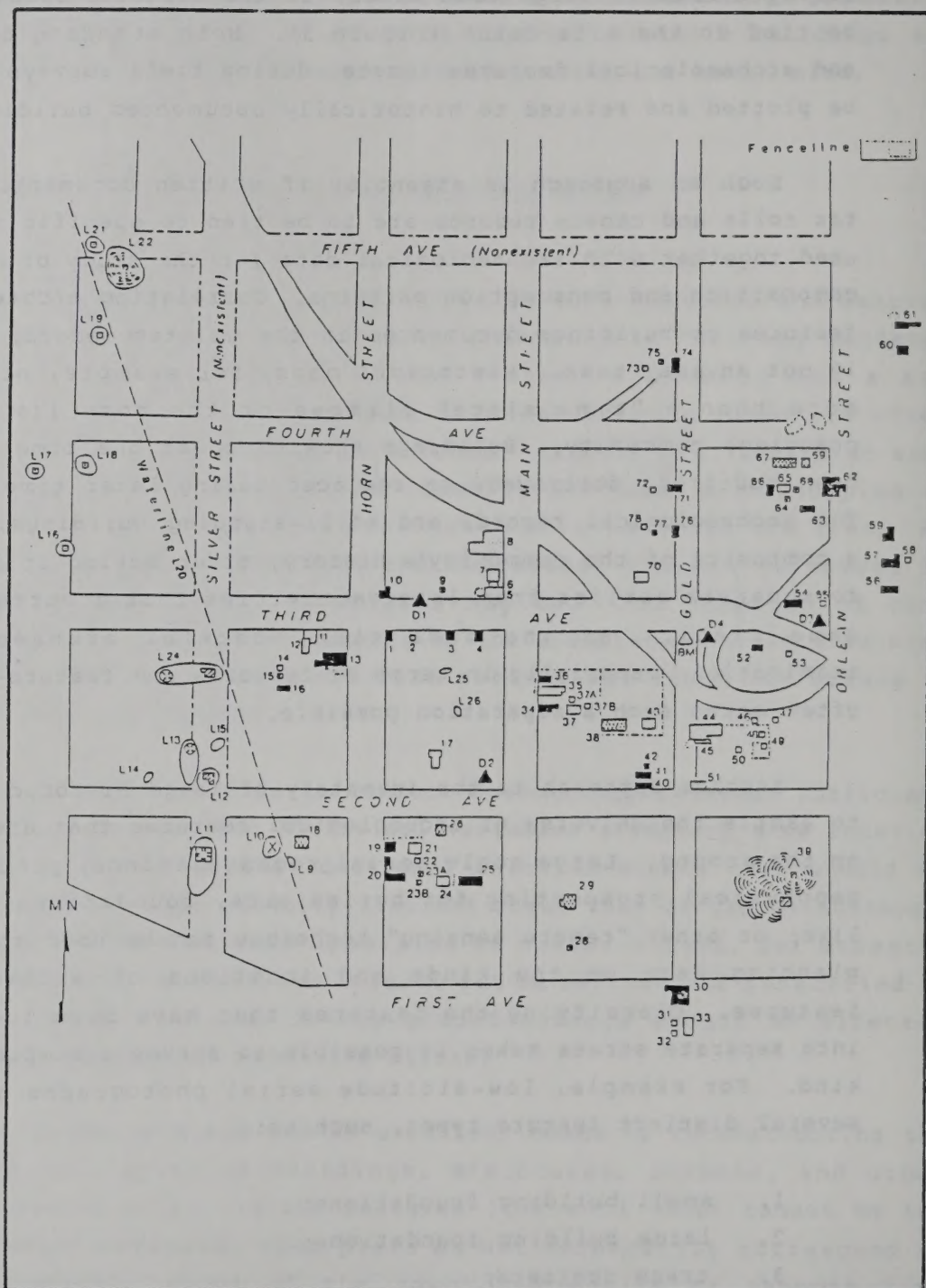


Figure 3. Overlay of township map onto archaeological feature map (after Sutton 1986).



5. concrete machine pads;
6. roads;
7. cemeteries; and,
8. trenches.

A percentage of each of these feature types can then be selected for on-the-ground examination.

Many times, especially in smaller field survey projects or in areas only lightly used during historic times, research yields little information about buildings, structures, and features. Consequently, the field archaeologist is confronted with an array of historic resources about which there is no written information and which do not have visible features showing up on large scale remote sensing maps. In such cases, the area should be sampled accordingly to accepted probabilistic methods. Simple random sampling is probably the best approach: the area is divided arbitrarily into quadrats or transects, and a randomly drawn sample of these is surveyed. The derived sample data can then be used to predict the number and types of sites present in the study area, to define any locational patterns exhibited by these sites, and to assess the general integrity and significance of the sites. The goal of the sampling approach should be to develop an archaeological model that will serve as a substitute for the unobtainable documentary model.

#### RECORDATION

The resources commonly found during the inventory of historical sites include:

1. standing buildings;
2. standing structures other than buildings (e.g., bridges, headframes, windmills);

3. archaeological features (e.g., evidence of landscaping, charcoal pits, foundations, prospects, trash pits);
4. archaeological strata or deposits; and,
5. objects (e.g., machines, cars, bottles).

Levels of documentation for each category are suggested below, based on examples of work conducted in Nevada.

### Standing Buildings and Structures

Many historic sites in Nevada have standing buildings and structures that must be documented as part of the inventory process. Both isolated cabins and buildings in large town sites are typical occurrences. How to properly record buildings in the field, therefore, is an important problem for archaeologists.

The Historic American Buildings Survey (HABS) and the Historic American Engineering Record (HAER) of the National Park Service have published useful guidelines on the recording of buildings and structures. Spiers (1982:23) identifies five steps in the completion of a historic structure report:

1. make a physical inventory of the building;
2. assess the condition and integrity of the building's structural framework, its fabric (material), and its finish;
3. identify those features that make the building historic or unique;
4. identify changes (modifications or additions) to the building; and,
5. record the building with drawings, photographs, and narrative description.



The National Park Service stipulates a format (NPS, Cultural Resources Management Guideline NPS-28, Release Number 2, December 1981, Chapter 3, page 18, Appendix F) consisting of three parts. The first part is an administrative data section; the second is a physical history and analysis section which includes a description of the building, a statement of significance, and an engineering assessment; and the third is an appendix that contains technical information (paint analysis, an assessment of future research potential for archaeology, engineering, and documentary evidence). However, it is usually not practicable to have the engineering and technical assessments made by field archaeologists.

Following these guidelines, Hubka (1985) has defined six categories of information that should be recorded on a historic building report. These include:

1. Administrative information;
2. Spatial Organization;
3. Architectural information;
4. Structural systems;
5. Social Uses; and,
6. Contextual information.

A detailed outline of a recommended historic building report form is presented in Appendix D. The first part of the report should include the building's name, location, builder and/or architect, dates of construction and alteration, present owner, present use, and general condition. Included in the spatial organization section are sketch maps and photographs of the building.

The architectural information section should include data on structure and style. The description includes information on the style, number of stories and bays, exterior siding, roof, fenestration, entry, and porches. In addition, the location, number of bays, and roof type of all additions should also be

noted. The structural system description includes information on the foundation, walls and support system, roof, additions, and associated structural features.

The social uses section details how the building was used. It should include both documentary and archaeological data about dates of occupancy and changes in use. Contextual data includes information about the physical and historical setting. The historical information should include names of past owners, any information available about original building plans and later modifications or additions, and historical events and persons connected with the building.

### Features and Strata

Other than objects, archaeological features and strata are the only directly observable data present at most historic sites. The features become meaningful only if they can be associated with time-sensitive and use-sensitive artifacts that allow them to be placed into a historical context. Descriptive data on the form and content of the features should be recorded.

The recording of "feature systems" should be another principal activity during field surveys. They are the link between documentary models (derived from thematic patterns and contextual history) and the archaeological record. Feature systems are formal clusters of buildings, structures, features, strata, and objects that can be shown to have been part of the same human activity. They include both directly observable data of formal characteristics (archaeological features, or objects, or both) and inferences about patterns of human behavior. To be assigned to a feature system, archaeological features must be contemporaneous and associated with use-identified artifacts showing their place in the system.



One or more feature systems belonging to the same time period are assigned to the same site "component". Each component represents a period of occupation at the site. The location of feature systems assignable to multiple components allows the reconstruction of the site's occupational history; data of this kind are especially important for developing and testing explanatory models such as optimal foraging models of the mining frontier (e.g., Hardesty 1985). Recording of historic sites, therefore, should include the identification of site components. In many historical sites, components are horizontally shifted, with no vertical separation.

How to approach the identification and classification of feature systems is suggested by Rodman (1985:49-60) in a discussion of site types on the Comstock. Documentary models are first constructed for each of the several mining and milling methods expected to have been used. The models are "how to" descriptions of technologies used on the Comstock, including such things as panning, hydraulicking, and dredging placer gravels; underground and open pit lode mining; waste rock and mill tailings mining; arrastra and patio milling; and Washoe pan, flotation, and cyanide milling. Material culture expectations for each of the models are then discussed (Rodman 1985).

Both the kinds of archaeological features and their arrangement are critical to the identification of feature systems. Kelly and Kelly (1983) discuss the arrastra as another example of a feature system. The arrastra is both a method for milling gold and silver ores and "a circular mill for grinding quartz by trituration between stones attached loosely to cross arms." Introduced from Spain into the silver mines of Mexico in the 1500s, the arrastra was widely used as a cheap, non-industrial, "low tech" way of processing ore. In the American West, they were used from 1850 until 1940 by prospectors and small-scale miners. For this reason, they are expected to show up in historic mining areas in Nevada.

Constructing a documentary model of the arrastra method involved research and oral histories outlining both the tools used and the steps taken to mill the ore. Kelly and Kelly (1983:88-89) provide a series of historic photographs showing what several varieties of arrastras looked like in operation. From these photos, it was possible to construct a series of expectations as to what an archaeological feature system should look like at a historic site. The model includes both the kinds of archaeological features and objects expected in the system and their spatial arrangements. Figure 4 shows a sketch map of an arrastra feature system in the Lake Mead National Recreation Area in Arizona (Kelly and Kelly 1983:91). Note the variety of individual features and objects associated with the arrastra system, including the platform, the perforated slab, the drag stone pile, and the outlet trough.

Hardesty (1986) provides an example of a large scale industrial feature system that is approached in much the same way. In the early twentieth century, the most common milling process used in the American West was cyanide leaching. Accordingly, historic mining sites dating to this period are likely to have some buildings, structures, and archaeological features used for this purpose.

The Cortez Mining District in central Nevada is an example. Organized in 1863, the district was worked and nearly abandoned several times before being taken over by the Consolidated Cortez Silver Mines Company in 1891. The new company built and operated the Consolidated Cortez mill, a large cyanide leaching plant, between 1923 and 1930. The kinds of human activity expected to have occurred during this time is suggested by a documentary model of cyanide leaching based upon textbooks, journals, newspapers, company accounts, and oral histories. The model includes a step-by-step identification of what went on during the milling process (Hardesty 1986:48). From it, an archaeological model of cyanide leaching as a large scale feature system



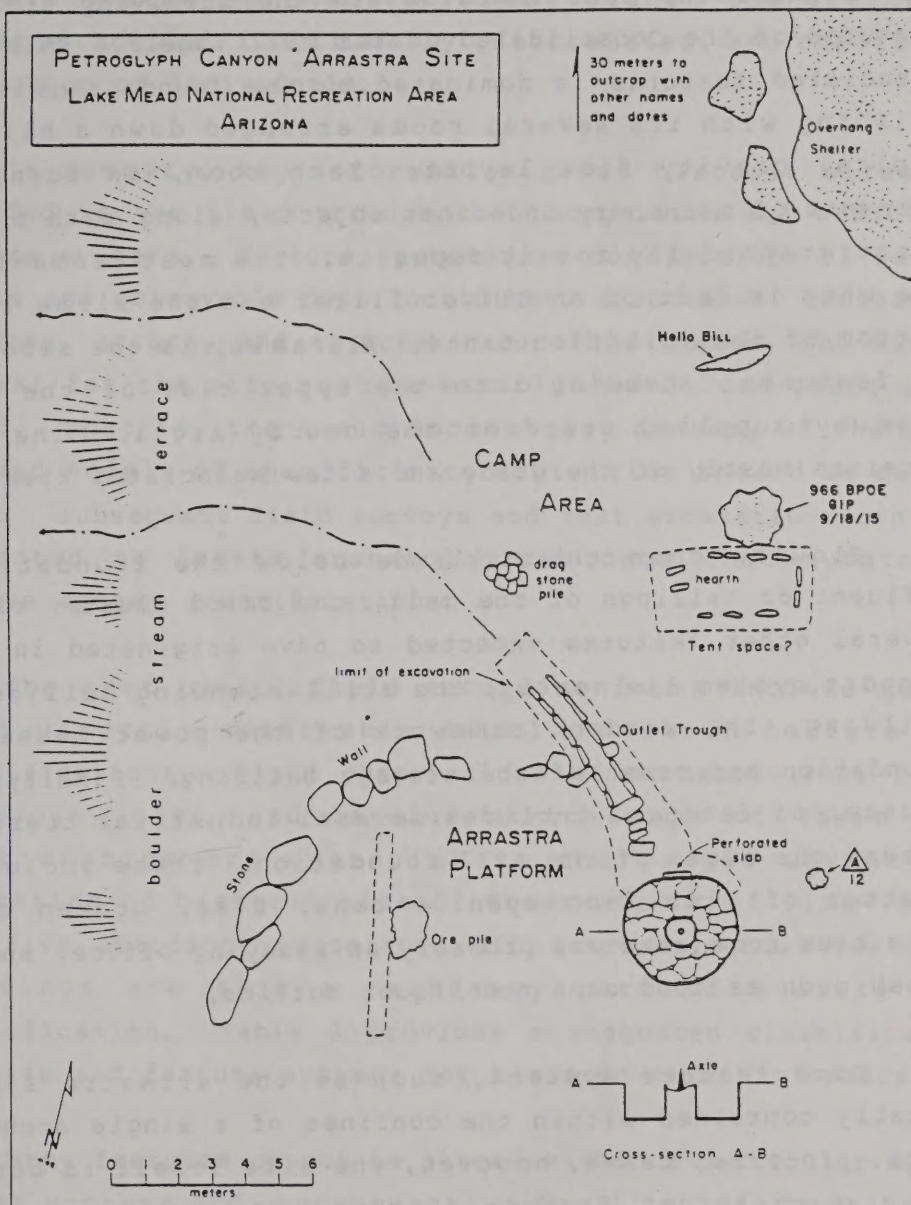


Figure 4. An arrastra feature system (after Kelly and Kelly 1983:91).

(Hardesty 1986:48-50) including six clusters of features could be constructed.

Perhaps the most imposing are the surviving archaeological features of the Consolidated Cortez mill itself. This cluster of associated features is dominated by the foundations of the mill building with its several rooms arranged down a hillside in a typical gravity flow layout. Each room, in turn, contains remnants of machinery and other objects, along with a variety of stratigraphically intact deposits. The most dramatic of these are what is left of an Oliver filter and the slime left on the bottom of the agitation tanks. A tramway is the second cluster of features. Leading into the upper tier of the mill, the tramway supplied ore from the nearby Arctic Mine and today consists mostly of the grade and a few associated ties and rails.

Flowing down the hillside below the foundation is the effluent or tailings of the mill, the third cluster of features. Several other features expected to have originated in the mill's support system lie nearby; the still-standing bullion recovery building, the wooden framework of the power house, and the foundation and trash of the storage building. Finally, the last cluster of features includes several industrial trash scatters around the edges of the mill foundation. These include a large scatter of lids from cyanide cans, slag, broken cupels and crucibles from what was probably an assaying office, and domestic trash such as food cans and liquor bottles.

Some feature systems, such as the arrastra system, are totally contained within the confines of a single archaeological site. In other cases, however, the site itself is but one part of a much larger feature system. In many such cases, the individual site is quite simple and might easily be discarded as of little research value if evaluated outside its larger feature system context. An example of such a feature system was recently documented among charcoal production sites dating to the 1870s



and 1880s in Eureka County, Nevada (Zeier 1985). Numerous charcoal oven sites were found to cluster together around a single residential base (Figure 5). Each cluster represents a feature system in that the sites within the cluster were contemporaneous, functionally interrelated, and created by the same group of individuals.

In summary, key information about historic sites can be recorded in the field through the recognition and definition of feature systems. Feature systems are combinations of behavioral models and observable data (buildings, structures, archaeological features, strata, and objects). For this reason, the historical context for the site must be established before going into the field. That is, the basic documentary history of the site and derived models of specific site activities should be completed first. Subsequent field surveys and test excavations can then be conducted to locate archaeological data that substantiates feature system identifications.

The most useful field recording forms include questions about directly observable data, and about feature system classifications. Field observations of archaeological features, buildings, etc., and careful sketch maps of their spatial relationships are essential to the proper inventory and evaluation of historic sites. Observations of time- and use-sensitive artifacts associated with archaeological features and buildings are also a necessary part of feature system identification. Table 8 provides a suggested classification of features and feature systems for historic sites in Nevada.

Many features cannot be placed within a particular system or larger context and, consequently, dwell in interpretive limbo. If a documentary model has been assembled for the area, it may be possible to assign probable functions to the features based on their location and general character. In the absence of such a model, the best one can do is attempt to define the feature's

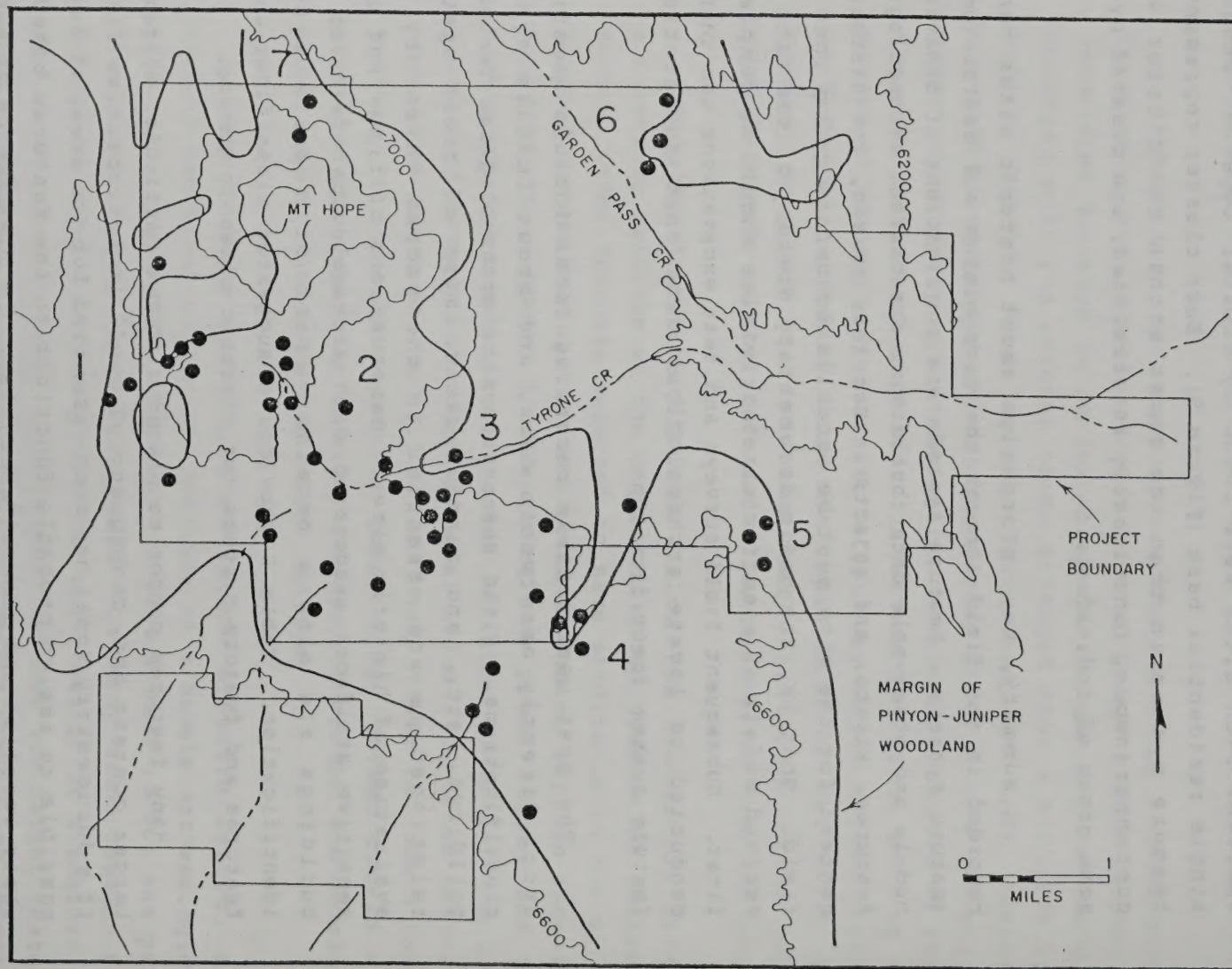


Figure 5. Charcoal oven and cluster locations (after Zeier 1985).



function based on its formal characteristics. With regard to time placement, the general contextual history of area will provide clues as to possible time ranges. From there, one must rely on gross indicators (e.g., square versus wire nails) to determine the most probable candidate.

Features vary considerably in size. For example, intact segments of railroad grades are frequently encountered. The importance of such features depends on their context within larger feature systems. If other elements of the historically significant railroad system (e.g., depots, roundhouses, section houses, rolling stock, and etc.) are extant, then the importance of the railroad grade itself is diminished. However, if the grade is the only remaining vestige of that historically important system, then its significance increases. The historical context and the adequate description of feature systems are needed to make such a decision.

### Objects

Much of what is observable at historic sites are surface scatters of objects with or without evidence of associations. If the objects are associated with buildings or features, they should be inventoried in conjunction with these entities. Tin can dumps, for example, can often be treated in this way. Objects that can be tied into feature systems, either functionally or temporally, should be considered a part of that system for descriptive and evaluative purposes. If the system is significant, then the object is of importance as a contributing element of the system.

Many objects, however, are isolated, lacking any apparent associations. In some cases, they are time-sensitive or use-sensitive diagnostics that provide point data on site occupations

and activities. Other than this, however, they are of limited value. More often, the objects are not diagnostic and cannot be tied to feature systems or site components either through time or use affiliation; such artifacts often belong to types that are manufactured with little change over long periods of time, or that are used for a wide variety of purposes. Consequently, they enjoy relatively little significance when viewed from the perspective of the National Register eligibility criteria.

#### ARTIFACT COLLECTION

Whether or not artifact and isolated objects should be collected or simply recorded in the field is a question with no easy answer. To be sure, the removal of objects creates several problems, including curation, removal from their original context (e.g., features and feature systems), and the time and money requirements of field collection and laboratory analysis. At the same time, collecting objects creates opportunities to provide much more detailed information about technology, use, and style through the use of technical studies in the lab, and to make observations in the future about object attributes that are currently not observable or not considered important.

Perhaps the most hazardous implication of collecting objects in the field, especially diagnostics, is their removal from an original context. Unless the field observer is especially trained and experienced in the type of site under investigation, the feature system to which the object belongs may be overlooked and not mapped. As a result, the collected diagnostic is removed from a critical association that it may have been able to date or associate with a particular human activity.

The best general rule that can be applied is, that if subsequent, more intensive stages of archaeological



investigations are likely, then it is best not to collect, but to retain the integrity of contextual relationships. In such cases, in-field recordation of data is preferable. If later stages of investigation are not likely, artifact collection should be undertaken and the collection should be curated. The artifacts given top priority for collection are those that are rare, are good time or use diagnostics, that are associated with recorded features, or that are subject to damage or unauthorized collection.

Another common problem with both field recording and collecting involves the selection of representative objects from a large group. Tin can dumps are examples. Some dumps have single event origins while others gradually accumulate over a number of years. Simply recording or collecting a few representatives from the dump at random is unlikely to give enough information to say which is which. Nor is recording or collecting a few examples likely to give information about variability among objects that originate in local or regional differences in technology, use, and style (even in mass-produced objects). A more reasonable approach would be the systematic sampling or recordation of objects. The nature of the sampling plan (level of effort, sampling procedure applied, and the like) should be justified in relation to specific research questions or goals. At a minimum, some provision must be made to assure that internal variability of large object scatters is sampled.

Table 8. Relationship of Thematic Patterns and Feature Systems.

Thematic Pattern	Feature System	Feature
I. Mining pattern	1. Placer planning systems	a. placer tailings
		b. pans/sluices
	2. Hydraulic mining systems	a. hose systems
		b. flumes/ditches
	3. Dredging systems	c. hillside scars
		a. dredge tailings
	4. Underground mining system	b. dredge parts
		c. ponds
		d. flumes/ditches
		e. hopper/grizzly
		f. riffles/sluices
		a. adits
		b. machine pads
		c. headframes
		d. blowers/fans
		e. tramways
		f. pumps
		g. generators
		h. digging tools
		i. assaying
		j. mine timbers
		k. firewood
		l. power plants
		m. rock dumps
II. Milling Pattern	5. Open pit mining systems	a. draglines
		b. scrapers
		c. loaders
		d. open pit
		e. rock dumps
		f. power shovels
	1. Arrastra system	a. platform/walls
		b. mill stones
		c. water wheel
		d. animal walkway
		e. center pole
		f. bar/supports
	2. Patio system	a. arrastra patio
		b. pulp patio
	3. Pan Amalgamation system	a. gravity mill building
		b. rock crusher
		c. grizzly
		d. stamp mill
		e. separators
		f. agitators
		g. pans
		h. tailings dump
		i. power plant
		j. tramway
		k. firewood



Thematic Pattern	Feature System	Feature
III. Transportation Pattern	4. Leaching systems	a. rock dump b. tailings dump c. tramway d. rock crushers e. ball/tube mills f. gravity mill building g. tanks h. agitation arms i. cyanide cans j. assaying k. grizzly
	1. Railway systems	a. grades b. rails/ties c. trestles/bridges d. section houses e. stations f. roundhouses g. rolling stock
	2. Trail systems	a. trails b. corrals/barns c. feed storage d. way stations e. animal tack f. rolling stock
	3. Air systems	a. landing strips b. hangers c. beacons d. aircraft parts
	4. Water systems	a. docks b. watercraft
	1. Haying systems	a. storage buildings b. harvesting tools c. transport d. fields e. fences f. planting tools
	2. Irrigation systems	a. dams/reservoirs b. fields/fences c. salt deposits d. erosion features e. ditches/gates
	3. Domestic Animal systems	a. corrals/fences b. stables c. feed storage d. faunal remains

Thematic Pattern	Feature System	Feature
V. Settlement Pattern	1. Isolated house systems	a. building features
		b. disposal features
		c. water supply
		d. storage features
		e. heating features
	2. Mormon Farm-villages	a. building features
		b. disposal features
		c. water supply
		d. storage features
		e. heating features
	3. Mining/logging camps	a. building features
		b. disposal features
		c. water supply
		d. storage features
		e. heating features
	4. Urban systems	a. household
		b. disposal features
		c. service features
		d. transportation
		e. public buildings
	5. Ranching systems	a. household
		b. animal
		c. storage
		d. water
	6. Industrial systems	a. extractive
		b. processing
		c. domestic
		d. transport
		e. storage
VI. Military Pattern	1. Fort systems	a. housing
		b. transport
		c. weapons
		d. hospital
		e. disposal



Thematic Pattern	Feature System	Feature
VII. Ethnicity Pattern	2. Battlefield systems	a. barricades b. casualty c. transport d. weapons
	1. Chinese system	a. architecture b. ritual c. food complex d. opium complex
	2. Italian system	a. architecture b. outdoor oven
	3. Mexican system	a. architecture b. maijolica c. mano/metate
	4. Native American	a. architecture b. food complex





## Chapter 4. EVALUATING THE SIGNIFICANCE OF HISTORIC SITES

From a procedural perspective, the evaluation of site significance is the most critical part of cultural resource management. Yet it is here that historic sites archaeology in Nevada is the least developed and the most variable.

Historic sites deemed as significant are protected by federal law under Section 106 of the National Historic Preservation Act of 1966 (Public Law 89-665). Significant sites are those listed on, or determined eligible to, the National Register of Historic Places. In order to qualify for the National Register, a property must possess characteristics that make it a good representative of an important theme or pattern in the history, architecture, engineering, archaeology, or culture of a locality, state, or the nation (NPS 1982). The National Register form provides a list of themes considered relevant at the national level. Themes important at a local or state level may vary from this list due to the area's particular history.

Significance is evaluated according to published federal criteria (Section 36 Code of Federal Regulations Part 60.6 and Section 36 Code of Federal Regulations Part 800.10); no state criteria currently exist. The criteria are:

1. association with events that have made an important contribution to our history;
2. association with an important person;
3. embodies a form or style that is typical of a time period, master, cultural resource type, or method of construction; and
4. has provided or has the potential for providing important scientific or scholarly information about history or prehistory.

A property of local significance helps us understand the history of a community, county, or small scale geographic unit through the impact of particular events or persons; architectural types or styles; or information content. Properties significant at the state level helps us understand the history of events at the state level, while those of national significance aid in our understanding of the nation as a whole (NPS 1982).

Which criterion and level of significance is employed will depend on the nature of the resource and its place in history. In the absence of any associations with important individuals, decisions are often made based on whether or not the historic site has standing buildings and structures. The first and third criteria are often used to evaluate sites where structures are present (e.g., Kensler 1982; Hallenberg 1979), while the fourth criterion is used to evaluate other sites. Problems exist with the manner in which criteria three and four have been employed.

#### CRITERION ONE

Some properties are of significance due to their association with important historic events. A property may be associated with either of two types of events; a specific event marking an important moment in American history, or a series of events that made a significant contribution to the development of a community, state, or the nation (NPS 1982). The site must be a good representative of the event or series of events and of the themes they represent. The correlation between the property and the event or series of events must be documented.

Where has this criterion been applied? The Cold Springs Pony Express station in Churchill County is an example of a historical site that is significant, in part, due to its association with a particular event (a premier transcontinental



communication network) important at the national level. The community of Genoa is an example of a site associated with a series of events significant at the local and state levels. Among its multiple associations are the site's role as a supply center along a principal wagon train route (Mormon Station), Mormon colonization, the honor of being the first community in Nevada, and its later association with the lumber industry.

## CRITERION TWO

Persons "significant in our past" means individuals whose activities were important within significant themes in national, state, or local history. The individual must be specifically identified and their association with the property must be demonstrated. The site should be compared with other properties associated with the individual to determine if it is a good representative of the person's contribution and the themes represented (NPS 1982).

During the late 1800s and early 1900s, Wavoka, the Paiute Indian that played a central role in the Ghost Dance movement among Native Americans, lived in a small, semi-subterranean pit-house located south of Yerington. The Ghost Dance movement was a significant event in the history of American religion and the association of Wavoka with the movement is well documented. Consequently, the remains of the pit-house structure are significant due to their association with Wavoka.

## CRITERION THREE

Criterion three actually consists of four sub-criterion. the resource may embody characteristics of a type, period, or

method of construction, or that represent the work of a master. The most important in the evaluation of historical sites in Nevada are the sub-criteria dealing with an architectural type or method of construction. In this more limited context, the property must clearly illustrate the pattern of what was common to a class of resources, the individuality or variation that occurred within a class, the evolution of a class over time, or the transition between classes (NPS 1982).

The problem is that most rural and many urban buildings in Nevada are categorized as vernacular architecture; few are representatives of the classic styles (e.g., Gothic Revival, Italianate). Little effort has been spent in identifying local or regional styles of vernacular architecture (but see Kensler 1982). In the absence of identified styles or architectural significance criteria, vernacular buildings are most often evaluated on the basis of their historical significance, especially as representative of a historically unique building type in a geographical region (e.g., railroad tie cabins).

While emphasis is placed on the sub-criterion dealing with building style, the other three sub-criteria should not be ignored. The phrase "type, period, or method of construction" refers to properties related by cultural tradition, or function; by date of construction or style; or by choice or availability of materials and technology (NPS 1982). For example, a ranch complex may be significant because it is a good representative of that site type, while a wattle-and-daub building may be significant because of its method of construction.

#### CRITERION FOUR

Criterion four recognizes that some resources are important because they contain information that may assist in the



resolution of scientific and scholarly issues or questions. Such questions are not standardized and may vary considerably, depending on the nature of the resources found in an area. Consideration under this criterion must address:

1. whether the resource contains information that can contribute to our understanding of history; and,
2. whether that information is important to the resolution of identified, significant research questions.

The importance of the information must be evaluated within an appropriate context (NPS 1982).

The archaeological element of the Nevada Historic Preservation plan (Lyneis 1982) identifies themes and provides key research questions for each. However, few reports have used these questions to evaluate site significance (exceptions are Pendleton et al. 1982; Price 1985). The questions that have been used tend to range from the trivial to the vague or implicit.

Trivial questions are those that are not truly related to significance issues, but rather deal with the pragmatics of site examination and interpretation. For example, such things as the reconstruction of food practices, houses, industrial technologies, or environments are trivial unless they are put into a broader scientific and scholarly framework that establishes their local, state, or national significance.

How to separate trivial from significant scientific and scholarly questions is a major problem in the evaluation of historical sites. The absence of good regional research strategies in historical archaeology appears to be the most important reason why so many trivial questions are used in site evaluations. The result is that site-specific research questions are identified and used to evaluate the significance of historic sites. When viewed in the perspective of the National Register,

few site-specific scientific questions are likely to be considered significant under the fourth National Register criterion (Note, however, that some scholarly questions with a humanistic orientation may be an exception).

The other end of the continuum is vagueness. Vague research questions address significant issues, but are either completely implicit or unworkable when applied to archaeological data. Many of the Class I overviews prepared for public lands in Nevada fall into this category when used as reference documents for assessing historic site significance. The goal of these overviews is to provide a historical context within which cultural resources can be evaluated. Unfortunately, they do not go far enough to be useful as a workable document for historic site evaluation. The overviews are not wrong, they are simply vague.

Identified historical themes usually suggesting what kinds of resources are present and which may be important, but the leap from these implicit generalizations to specific evaluation criteria is seldom made (see however, Bowers and Muessig 1982; Pendleton et al. 1982; and Smith et al. 1983). The result is that vague research questions are often used in assessing the significance of specific sites, buildings, and structures.

The problem encountered by the researcher is the lack of adequate middle range theory in historical archaeology that links the grand theory to archaeological data (cf. Binford 1977). For example, frontier theory has been proposed as a key research framework in the Great Basin (Hardesty 1979; 1981; 1985) and has been used for site evaluations (e.g., James et al. 1985; Smith et al. 1983; Sutton 1986; Zeier 1985). Yet, the specific frontier research questions used to evaluate significance are often stated so vaguely that it is impossible to make a good case for the site or features having high information potential. The connection between theory and data is clearly missing and the significance of the sites is generally unexplained or unconvincing.



With regard to buildings and structures, it should be possible to develop a means of evaluating the research potential and significance of vernacular architecture. This is essential if we are to deal systematically with a majority of Nevada's built environment. Questions about the evolution and diffusion of building forms, the organization of building space, and structural grammars of building styles and construction are important in the development of such a regional research plan.

One approach might be to develop a contextual matrix for vernacular buildings (Figure 6). Several building types likely to be encountered at historic sites are listed on one side of the matrix, based upon construction methods (Kensler 1982:I-39 to I-477; Bowers and Muessig 1982:90-95). The major types include:

1. sod or dirt roof;
2. rubble-rock;
3. dugouts;
4. wattle-and-daub;
5. wooden mass-walled (log or railroad tie walls);
6. brick;
7. adobe or mud-wall;
8. cut stone; and,
9. wood frame.

On the other side of the matrix are listed several key research themes relating to vernacular buildings. The themes include:

1. use of space;
2. evolution of building forms;
3. chronology;
4. evolution of building styles;
5. ethnicity and building form, style, and construction; and,
6. geography of building construction.

Recent						
Gaming and Tourism						
Transportation and Federalism						
Late Bonanza						
Depression						
Early Bonanza						
Colonization						
Exploration						
	Settlement	Ethnicity	Farming and Ranching	Military	Transportation and Communication	Mining and Milling

Figure 6. Evaluation Matrix for vernacular architecture.



Key research questions can then be identified for each cell of the matrix. This allows for the evaluation of resources that are representative of a vernacular form against prescribed criteria of significance specific to that form.

Significance evaluations based on a building's research potential have not been forthcoming for the most part. Important research questions about buildings, however, can and should be identified from the disciplines of geography (e.g., Kniffen 1965), folklore (e.g., Glassie 1975), and proxemics (e.g., Hall 1966; Rapaport 1969), among others.

Often, it is necessary to assess the relative significance of historical sites, buildings, structures, features, deposits, and objects. Such statements should revolve around specific significance values. These might include:

1. Inventory value. Poorly represented or rare historical sites and features for each cultural theme have higher inventory value than site types that are well known. In addition, sites and features with good time or function identification or associated with time/use diagnostics have higher inventory value than those that do not.
2. Historical value. Historical sites and features that can be associated with "important people or events" have higher historical value than those that are not. Historical sites and features that can be shown to have symbolic associates with existing cultures or peoples have higher "historical" value than those that do not.
3. Scientific value. Historical sites and features that contain information related to key research questions for dominant cultural themes have higher historical value than those that are not. Historical sites and features that can be shown to have symbolic associations with existing cultures or peoples have higher "historical" value than those that do not.

4. Fiscal value. Large or deeply buried historical sites have higher fiscal value than small or surface sites; data recovery programs are more expensive at large or buried sites.

#### THE UNLISTED CRITERION: PUBLIC ATTITUDES

Preservation actions by state and federal agencies are undertaken on behalf of the public at large. Over the years, the federal preservation program has called for greater levels of public notification and involvement in decision making processes. The consideration of public attitudes is of particular importance with regard to historical sites, since they often enjoy a high emotional, or community spirit, value.

In most cases, public and scientific attitudes about the significance of a historical site will be similar, both groups agreeing that the site is important or expendable. However, the possibility for disagreement is real. Public attitudes toward a historical resource may be quite different than those expressed by the scientific community. The public might express an interest in a site deemed insignificant by scholars. Alternately, scholars may value a site for which the public has little use. The key to this issue is that if either group thinks the site is important, then something should be done.

#### OTHER SIGNIFICANCE CONSIDERATIONS

The National Register significance criteria provide an established framework within which decisions must be made. However, several other factors often effect the evaluation a of a historical site's significance.



## Site Disturbance

The critical problem of evaluating the significance of disturbed historic sites (disturbed by vandalism or by a history of disturbances brought about by recurrent mining activity) can be solved by looking at the processes that established the site structure rather than looking at the site as a whole. Site structure is best approached through an analysis of feature systems. From this perspective, historic sites are formed through the accumulation of feature systems. Feature systems may be either horizontally or vertically stratified depending upon the location of the activity taking place, the amount of time involved, and the deposition rate (South 1979). Historic sites, therefore, can be viewed as a set of overlapping features, depositional strata, and objects making up feature systems.

At sites that have been recurrently occupied, such as those in historic mining districts, feature systems from earlier occupations tend to be partly destroyed by those from later occupations. In many cases, only a few features, strata, or objects from the earlier feature system will be left. Furthermore, the relic features or strata may occur on any part of the site, either on the edge or in the center. The structure of historic sites must be viewed as discontinuous, surviving remnants of multiple occupations and feature systems, not as a continuous accumulation of historic debris. As a result, it is essential that good field searches for surviving feature systems be conducted as part of the survey and site evaluation process.

Site structure must also be considered in evaluating the impact of past bottle hunting or other disturbances. The mixing of archaeological deposits is not a uniform process, but one of specific historical events. What appear to be mixed deposits may not mean that the site has been lost as a source of information regarding key historical and scientific questions. Depositional

strata may be mixed, for example, but buried features may be undisturbed. The surviving features can be classified into feature systems and related to important research goals.

### Edge Effects

One of the major problems that has emerged in the conduct of historical sites archaeology in Nevada is what to do when a survey and evaluation project passes through the "edge" of a much larger site. The problem is especially pronounced in historic mining districts. Haul road rights-of-way, for example, and specific mining claims are likely to have a direct impact upon only a small part of the district's archaeological record.

Inventory methods employed in the small parcel are not the issue; the problem is assessing the "significance" of the features, deposits, buildings, or structures to be impacted by the proposed action. As a general rule, the significance of historical properties in the small parcel cannot be evaluated without taking into consideration the rest of the site or district. Mining districts, for example, as discusses earlier, are integrated cultural units; landscapes and historical properties are the product of behavioral systems working at the level of the district. The relative significance of any feature or building within the district cannot be assigned without understanding the larger context.

Accordingly, evaluations of site "edges" are meaningless unless a documentary model is available for the district as a whole. The key inventory, historical, and scientific questions for the entire district, for example, must be identified before the significance of any historical property within the district or along its margins can be evaluated.



## Chapter 5. ARTICULATIONS

The effective management of historical sites in Nevada should involve several professional disciplines as well as state and federal agencies. How these groups should be articulated to best meet management goals is considered below.

### INTERDISCIPLINARY COORDINATION

Adams (1977:126) has argued convincingly that the study of historical sites is best approached through the "synergistic combination of historical, archaeological, and ethnographic" methods. Synergism is the key; the joint or united action of different groups producing an effect greater than the sum of the effects of the groups acting in isolation.

Many studies of historical sites have involved professional historians, architects, anthropologists, and others in the preparation of reports, especially in the development of cultural resource overviews and larger mitigation projects. For the most part, however, they have been used as consultants to do independent research on particular parts of the project. Seldom have they been members of an interdisciplinary team working interdependently on all stages of the project. The typical result is a choppy report that is difficult to use, especially for the purpose of building a strong case for management goals such as site protection or data recovery.

What is needed is a plan that will facilitate the effective integration of professionals from several disciplines, each with a specific expertise, into the various stages of historical archaeology. Greater use of the "synergistic" approach would make such studies more worthwhile. What is required in such an

interdisciplinary plan for the study of historical sites? First of all, the preparation of an interdisciplinary team requires the identification of the different levels of expertise needed to do the job. The tasks required will vary from one site to another. In general, data regarding historical sites can be gleaned from three sources: documentary, archaeological, or architectural sources. The tasks required to collect and interpret data for the management of most historical sites, then, include documentary research, archaeological research, and architectural research. Each task is the domain of a distinct professional group with specialized academic training and standards. In very few instances does a single individual have the expertise to effectively do all three tasks.

At the same time, it is unlikely that fully trained academic historians and architects are needed to do all stages of the tasks identified above. The level of expertise needed for each stage, however, is an important decision. For example, the field recording of standing buildings with the help of standardized forms and a set of structured answers can, in most cases, be done by field workers with no special training. But the evaluation of the architectural data so collected, and the review of field forms, are tasks that should be undertaken by professionally trained architects or architectural historians. If industrial structures are involved, as is often the case in Nevada, trained engineers specialized in the industry under study should participate in site evaluation, if at all possible.

The interaction between archaeologists and historians in the study of historical sites is of special concern. Documentary data can be found for almost any historical site, but the level of expertise required to seek out and interpret such data varies greatly from one aspect of historical archaeology or preservation planning to another. Trained academic historians (holding at least an M.A. degree in history) should be employed to make the broad interpretations of documentary data needed in cultural



resource overviews that include historical sites. The proper weighting of historical evidence coming from documents is the special expertise of historians and should be used to advantage in identifying the themes from which inventory and significance questions are derived.

But, what is the role of the professional historian in the mundane, day-to-day studies of historical sites usually done in cultural resource management? Archaeologists usually end up doing whatever documentary research is done in the vast majority of these cases. And most of the research is conducted without formal training in the study of documentary records, much less in historical verification and interpretation. There are two problems with the continuation of such procedures. First, the questions of standardization and reliability will remain. One wonders about the variation in accuracy and completeness from one study to another; some reports are excellent, others are much less so. Second, the question of cost-effectiveness must be considered. Are professionally trained historians able to do the job more rapidly and, therefore, more cheaply?

Two recommendations are appropriate. First, a professional historian should be included on the staff of state and federal agencies that routinely manage historical sites. Historians and archaeologists should be integrated into interdisciplinary teams working on the tasks of inventory and evaluation. Second, a set of standardized guidelines for the conduct of documentary research be prepared and used by all cultural resources management personnel.

#### STATE AND FEDERAL COORDINATION

At present, most agencies involved in cultural resources management are emphasizing field surveys to the exclusion of

other preservation planning aspects. The criteria now being used for the evaluation of significance are as varied as the reports themselves. The research problems identified for historical archeology in the existing state plan are seldom used. The criteria for approving historical sites research should be standardized and tied to a Historical Archaeology Element of the Nevada Historic Preservation Plan. At present, there is no uniformity in the stated goals of historical sites research conducted under the auspices of state or federal agencies.

Effective cultural resources management decisions by both state and federal agencies are based on the availability of adequate inventory and evaluation data. We are regularly generating inventory information, but evaluation usually is undertaken only in particular situations. The goals of cultural resources management cannot be met without a more determined emphasis on site evaluation, including the consideration of the site's placement within the contextually defined thematic history of the state and its National Register eligibility.

The clearest message of the discussion on significance evaluations (Chapter 4) is that context is the single most important tool to be used in making such decisions. The development of an adequate context will often involve resources well beyond the confines of a particular project area or administrative district. For example, a realistic consideration of the Cold Springs Pony Express station requires an assessment of other such stations located in Nevada. Greater interagency cooperation will be necessary if we are to develop the ability to make comprehensive resource evaluations.

Cultural resources management should involve more than a project by project resolution of inventory and potential effect determinations. It should include a long range planning element that provides a larger perspective to the effort and allows for the definition of non-project related inventory, evaluation,



research, and preservation goals and objectives. This is why the Secretary of the Interior has been placing an increasing emphasis on preservation planning.

The Division of Historic Preservation and Archeology has the responsibility of taking the lead in preservation planning for Nevada as a whole. To the extent possible, the State and the various federal agencies should develop procedures where as the work conducted on federal holdings will make use of and contribute to the development of the state planning effort. This responsibility is outside the bounds of the legal relationship between the Division of Historic Preservation and Archeology as the SHPO and the various federal agencies. However, project related reviews by the Division should use the the State plan criteria as a way of promoting standardization.

As discussed in Chapter 2, development of a State level preservation plan involves the definition of geographic units. The Division of Historic Preservation and Archeology should consider the historical archaeology element of the state plan using federal agency districts as the geographic units. this would enhance the plan's usefulness to the federal agencies, provide incentive for federal use of the plan, and be the easiest to incorporate into present agency planning processes.

The interdisciplinary team approach to the management of historical sites discussed in Chapter 5 is recommended as well. Report reliability and cost-effectiveness are the most immediate benefits of using teams made up of a least historians and archaeologists. The importance of having team members interact at most stages of the planning process cannot be overstated.

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## Chapter 6. RECOMMENDATIONS

This report, prepared for the Nevada Division of Historic Preservation and Archeology, was intended for use by archaeologists involved in cultural resources management. Its purpose was three fold. First, it allowed the development of preliminary planning processes and guidelines (Chapter 2 and Appendices A and B). Second, it hopefully elevated the level of awareness regarding the relationship of historical archaeology and inventory, significance evaluation, and site research potential (Chapters 3 through 5 and Appendices C and D). Finally, it should act as a vehicle that will stimulate greater awareness, interest, and consideration of historical archaeology.

Resources dating to the historic period are abundant in the State, but procedures and guidelines that would structure their consistent management are not available. As a result inconsistencies have emerged in management practices. Several recommendations are provided below which, if implemented, should contribute to a more acceptable management posture with regard to historical archaeology.

### INCREASE AWARENESS OF PRESERVATION PLANNING PROCESS

As mentioned in Chapter 2, the federal historic preservation program administered by the National Park Service is placing an ever increasing emphasis on the use of preservation planning. This will have a pronounced effect on the manner in which all cultural resources management activities are conducted. It is recommended that the Division of Historic Preservation and Archeology take steps to increase public awareness about the preservation planning process. Possible actions might include:

- distribute copies of the Secretary of the Interior's standards on preservation planning and the earlier publication on the Resource Protection Planning Process (U. S. Dept. of Interior 1980);
- distribute copies of Managing Archaeological Resources on the Comstock (Hardesty and Firby 1980) as an example of preservation planning in an archaeological context;
- hold workshops on preservation planning; or,
- develop an informational bulletin on the preservation planning process designed around the Comstock project as an example.

#### DEVELOP A HISTORIC PRESERVATION ELEMENT

It is recommended that this document be considered a working draft of a historical archaeology element to the Nevada State Historic Preservation Plan. Three steps are proposed to be completed, prior to its adoption.

First, we recommend that this draft be distributed to as wide an audience as possible. Given the Nevada Council of Professional Archaeologist's participation in this report, we recommend that a copy be submitted to each active member of the Council for review and comment. Further, we encourage the Division of Historic Preservation and Archeology to send the draft to other professionals and agency representatives that may have an interest in the subject of historical archaeology.

Second, we recommend that once all the parties have reviewed the draft, that a meeting be convened to discuss the draft and plan for its modification into the finalized historical archaeology element. This meeting should consist of a series of workshops where representatives of various professions and agencies can discuss the following issues:



- The preservation planning process and the development of a plan for historical archaeology. Discussion items should include the adequacy of the historic themes, temporal periods, and geographic units proposed herein; the definition of research concerns and significance issues for the identified cells; and the discussion of procedures for regular revision of the plan.
- What constitutes sufficient and necessary recordation procedures to be carried out during various levels of survey activity.
- A consideration of how best to apply the National Register criteria of significance at historical archaeology sites in Nevada.
- The adequacy and viability of the guidelines recommended herein. Particular attention should be paid to the level of recordation, artifact collection policies, and reporting responsibilities necessary for each level of survey, for testing activities, and for data recovery and mitigation.
- The identification of articulation procedures and policies that address the multi-disciplinary interest in historical archaeology, and channel the constructive efforts of all disciplines toward the understanding and preservation of the resource.

Third, and finally, the conclusions of the meeting should be reviewed and incorporated, as necessary and prudent, into the report. The final version of that report should then be printed in a format adequate for wide public distribution.

#### ADOPT GUIDELINES ON THE CONDUCT OF HISTORICAL ARCHAEOLOGY

Guidelines for the conduct of historical archaeology in Nevada will be one product of the preservation plan proposed

above. A draft copy of recommended guidelines are provided as Appendix B. It is recommended that the Division of Historic Preservation and Archeology review, and when finalized, adopt these guidelines. It is further recommended that the Division, in its capacity as the State Historic Preservation Office, seek the adoption of these regulations by other agencies active in cultural resources management in Nevada. Central among these are the Bureau of Land Management and the U. S. Forest Service.

#### ADOPT STANDARD RECORDATION FORMS

It is recommended that the Division of Historic Preservation and Archeology review, and when finalized, adopt the recommended building report, feature, debris scatter, and isolate recordation forms presented (in draft) in Appendix D. It is further recommended that the Division, in its capacity as the State Historic Preservation Office, seek the adoption of these forms by other agencies active in cultural resources management in Nevada.

#### PREPARE AN INVENTORY OF NEVADA'S HISTORIC COMMUNITIES

Nevada's historic preservation plan (Page and Associates 1978) identifies several objectives the State should attempt to accomplish. One of these objectives is to list and prioritize the remnants of historic communities, or ghost towns as they are referred to in the plan (Page and Associates 1978:84-85). The development of such a list will allow for a preliminary assessment of these communities. The availability of this information will allow the cultural resources manager to evaluate public and agency sponsored project proposals, presumed threats to the resource, and survey plans at a level commensurate with the relative quality and potential of the resource.



It is recommended that the Nevada Division of Historic Preservation complete this objective as soon as possible. Actions to be undertaken should include:

- a search of historic documents and literature, the goal of which is a preliminary listing of all past communities in the State;
- a review of extant site files to determine which of these communities have been previously recorded. Site documentation of previously recorded sites should be compiled and evaluated;
- a physical examination, and preliminary recordation of each site by competent historical archaeologists;
- an evaluation of all the communities based on their relative integrity and likelihood to contain important historical, architectural, industrial, or archaeological information; and,
- categorization of the communities based on the need for management consideration.

The State could be broken into small units and prioritized on the basis of levels of presumed activity. Areas of highest activity should be given first priority for funding by the State. Other agencies involved in cultural resource management in the state should be contacted to see if a cooperative program could be developed, funded, and carried out.

#### DEVELOP A USER'S GUIDE FOR THE BUILDING REPORT FORM

Adequate architectural recordation requires an awareness of specific descriptive terms. However, Bowers and Muessig (1982:115) note that:

While archaeologists are trained to identify important elements of an archaeological site, they do not necessarily have the knowledge required to do the same for historic structures. Therefore, the best form for recording structures is one that asks specific questions and provides a range of possible answers.

To facilitate proper use of the building report form, it is recommended that the Division of Historic Preservation and Archeology develop a user's guide that will assist those unfamiliar with these terms. This guide should contain a standardized set of answers to each of the general questions contained on the form.

#### CONDUCT WORKSHOPS TO INCREASE AWARENESS OF HISTORICAL ARCHAEOLOGY

This report was precipitated by inequities in the manner in which historic archaeological sites are being administered in Nevada. This problem has two central aspects; the archaeological and the administrative communities.

Federal, State, and private sector archaeologists involved in cultural resources management, private level, do not share a common level of understanding, training, or interest in historical archaeology. Many lack the tools they need to adequately identify, evaluate, or represent historic sites to management or the public. Site and feature identification is often perfunctory, evaluations are based on physical appearance without reference to contextual history or feature matrices, and representations are superficial.

Given the nature of their position, administrators are confronted with numerous, often conflicting, perspectives that they must balance in making a decision. It should come as no



surprise that historical sites are often neglected by administrators, especially when the resource is represented in a superficial manner. A secondary result is that the potential for interagency conflicts increases. Agency decisions are more likely to be challenged by the State Historic Preservation Office, the Advisory Council, or the public at large.

It is recommended that the Nevada Division of Historic Preservation and Archeology prepare and conduct workshops designed to educate archaeologists and administrators regarding the nature of historical archaeology. Separate workshops should be developed for each audience. The workshop for archaeologists should emphasize inventory, recording, and evaluation standards and procedures. The legal context of cultural resources management should also be reviewed with a particular emphasis on regulatory, procedural, and administrative options that can be employed to ensure adequate resource management. The workshop for administrators should emphasize the viability and importance of historic sites as a resource; regulatory, procedural, and administrative options for the management of these resources; and the levels of information required to make adequate decisions regarding this class of resource.

*get a detailed historical overview*





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## INTRODUCTION

Adequate consideration of historical archaeology must take into account four levels of cultural resources management activity: long range resource preservation planning, site identification surveys, significance evaluation (potential), and mitigation or data recovery. Three particular responsibilities are considered relevant to these activities: recordation, artifact collection, and reporting standards.

## APPENDIX A: CONSIDERATIONS DURING PLAN

It should be recognized that preservation plans are intended to be **GUIDELINES FOR THE CONDUCT OF HISTORICAL ARCHAEOLOGY** and over time. They are not rigid and are subject to change in a project specific situation where the resources are scheduled for destruction or abandonment. They are appropriate where management decisions are required on a continuing basis. Examples might include state parks that include prehistoric resources (Fort Churchill, State Park, Floyd Lake State Park), interpretive historic sites (Cold Springs Road Interpretive Station, the Colorado Historic District), and areas not subject to cultural resource evaluation but areas of critical environmental concern.

The goal of a preservation plan is to identify meaningful information pertinent to the history of an area, interpret, preserve, and enhance the historic resources, establish a series of specific research topics, and allow for future and continuing updates of planning documents. The goal of evaluation and the identification of historic resources is to provide a basis for the development of a plan to guide the management of the area and to provide a basis for the development of a plan to guide the management of the area. The plan should be developed prior to plan development. Those involved in this process should be the interdisciplinary team developing the plan, the planning agency, and the NHPA.





## INTRODUCTION

Adequate consideration of historical archaeology must take into account four levels of cultural resources management activity: long range resource preservation planning, site identification (survey), significance evaluation (testing), and mitigation or data recovery. Three particular responsibilities are considered for each of these activity levels: recordation, artifact collection, and reporting standards.

## CONSIDERATIONS DURING PLAN DEVELOPMENT

It should be recognized that preservation plans are intended to structure the management of cultural resources in a defined area over time. They are not appropriate in a project specific situation where the resources are scheduled for destruction or abandonment. They are appropriate where management decisions are required on a continued basis. Examples might include state parks that include numerous historic resources (Fort Churchill State Park, Floyd Lamb State Park), interpreted historic sites (Cold Springs Pony Express Station, the Comstock Historic District), and areas set aside due to cultural resource sensitivity (BLM areas of critical environmental concern).

The goal of a preservation plan is to identify meaningful units within the history of an area, discern data deficiencies, prescribe significance evaluation criteria, establish a series of specific research topics, and allow for ready and continual update of planning elements. The scale of application and the boundaries of the area to be considered within the plan shall be agreed upon prior to plan development. Those involved in this decision shall be the interdisciplinary team developing the plan, the administrative agency, and the SHPO.

The plan shall be based on an appropriate level of archival research as determined by the size of the area, the nature of the resources present, and the availability of research data. Sufficient narrative shall be provided to support the contextual matrix presented in the plan. However, the narrative should not constitute the principal part of that report. Rather, it should serve as a means of defining and providing substance to the contextual matrix.

The contextual matrix shall be defined on the basis of cultural, temporal, and geographic dimensions. Relevant cells within the matrix shall be identified and discussed. This discussion shall include an assessment of prior research directed toward particular cells, relevant research questions, significance evaluation criteria, remaining data needs, and an identification of inventory and research goals.

The plan shall allow for adequate and timely review, and as necessary, modification prior to implementation. Review should include representatives of professions that may have a research interest in resources covered by the plan.

Field recordation and artifact collection are not appropriate during preservation plan preparation. However, those involved in plan development should visit the area as a means of familiarizing themselves with the resource.

#### CONSIDERATIONS DURING SURVEY ACTIVITIES

The Bureau of Land Management has published guidelines (BLM 1985) that serve to direct the manner in which cultural resources identification studies are undertaken. These guidelines are accepted as something of a statewide standard and have been acknowledged by the Nevada Division of Historic Preservation and



Archeology and certain federal agencies such as the U. S. Forest Service. These guidelines identify three levels of survey activities. Each will be considered separately.

### Class I Surveys

Class I surveys are intended to review existing information and draw conclusion based on that data. In addition to the present guidelines regarding the conduct of Class I surveys, the following recommendations are proposed.

The goals of a Class I survey with regard to historical archaeology should include the presentation of a historical narrative that is informational, but directed toward the identification of a contextual matrix. That matrix should make maximum use of themes identified in the Historical Archaeology Element of the Nevada State Historic Preservation Plan. Historic themes and chronological periods relevant to the project area, and geographic sub-units shall be identified, if they have not been identified previously. Lists of probable site types, key research questions, significance criteria, data needs, and management priorities shall be identified.

If the Class I is project specific and the project area is known to be rich in historical resources, then a documentary model should be prepared for those areas most likely to contain historical resources. If the area included in the Class I survey is large, say an administrative district or region, then the development of such models is inappropriate. Which Class I surveys (or particular parcels thereof) will require development of such a model must be agreed upon by the archaeologist performing the work, the land managing agency, and the Nevada SHPO. The model shall include land use predictions for each significant temporal period and site type locational predictions

for each land use area per period. These actions are intended to directly contribute to the development of lists of typical and important site types, significance criteria, key research questions, data gaps, and management priorities.

Preparation of the historical archaeology element of the Class I document shall be undertaken, or received by qualified historical archaeologists and historians. If intact or deteriorated structures or buildings are known or likely to be located in the area of investigation, an architectural historian shall be included in the project team to ensure that the built environment is adequately considered. If industrial sites are involved, the advice of a knowledgeable engineer should be sought.

The question of collection is not appropriate during the preparation of Class I survey reports, since they do not involve field related activities. No collection shall occur during the preparation of Class I documents.

#### Class II and Class III Surveys

Class II surveys involve the physical examination of a sample of a project area. Such surveys are only applicable for projects that encompass relatively large tracts of land. Class III surveys involve the intensive physical examination of a project area. Provisions are made for differing levels of survey intensity (transect intervals) based on a prior awareness of resource density and relative significance. In addition to the present guidelines regarding the conduct of Class II and Class III surveys, the following recommendations are proposed.

Documentary models are very useful in defining zones of relative resource sensitivity. They are particularly useful



during Class II surveys, where the land use zones defined by the model can be used as sampling strata. During Class III studies, the documentary model can be used to prioritize survey activities, ensuring that levels of effort are commensurate with the sensitivity of the resources present.

Given the abundance of historical data sources available and the relevance of this information to the survey process, an appropriate level of archival work must be undertaken prior to entering the field. The SHPO and federal agencies may wish to consider requiring pre-survey documents that details the results of this archival research and its implications on field strategies and procedures. This would be the most relevant in areas where historical resources are known or thought to be abundant.

Intact and deteriorated buildings and structures shall be identified, designated by a number or letter, and recorded on a building report form. A feature sheet should be completed for each building and structure ruin. Copies of these forms are provided in Appendix D. Features and feature systems should be identified, designated by a number or letter, and recorded. Debris scatters and concentrated dumps shall be identified, designated by a number or letter, and characterized as to their size, density, and the types of items present. Each scatter shall be recorded on a Debris Scatter record form (see Appendix D). A list of all identified scatters and dumps shall be maintained. Also documented on this list shall be temporally or functionally diagnostic isolated artifacts. An overall site map shall be prepared showing the location of all buildings, structures, dumps, feature systems, and listed isolates.

Artifact collection shall not be carried out as a part of either Class II or Class III surveys. To the extent necessary, artifacts shall be recorded in the field. This recordation shall be accomplished in a manner that will not alter any contextual

information potential the artifacts may have. Artifact collection is allowable only if:

- the artifact type is exceptionally rare;
- the item is isolated (outside the context of a feature or feature system), is time or use diagnostic, and located at a site where further work is unlikely; or,
- is time or use diagnostic, and threatened by imminent destruction or likely to be the subject of unauthorized collection.

The overall site map and copies of all building report forms, feature sheets, debris scatter forms, and a list of isolates shall be submitted as a part of the report documenting the survey activities. This information may be appended or incorporated into the report, but should not be included in that section excluded from public copies of the document (i.e., the section intended only for agency use).

Site type and location data derived as a result of survey activities shall be used to address the adequacy of any contextual matrices, significance criteria, research questions, or management priorities identified for the general project area in a preservation plan or documentary model.

Sections of the Class II and Class III reports dealing with the description and analysis of historical archaeology shall be prepared, or reviewed by qualified historical archaeologists and historians. If the description and analysis of intact or deteriorated structures or buildings are undertaken as a part of the investigation, the resulting building report and feature forms, and those portions of the resulting report dealing with architecture will be either prepared or reviewed by an architectural historian prior to finalization.



## CONSIDERATIONS DURING TESTING ACTIVITIES

Once identified, some resources require further investigation before their eligibility to the National Register can be determined. Testing activities are directed toward determining if the site retains sufficient integrity and significance to warrant such eligibility and to answer questions such as temporal placement and activity identifications.

The level of recordation for structure and building ruins shall be upgraded by completing a building report form for each such ruin. Building report forms and feature sheets shall be amended, as necessary, to include any new observations or data. Building report forms and feature sheets shall be completed for all buildings, structures, features, and feature systems not previously recorded.

Two types of collection recognized to occur during testing: the recordation of items while still in context, and the recordation of items removed from their context. Emphasis should be placed on artifact recordation in the field. This recordation shall be accomplished in a manner that will not alter any contextual information potential the artifacts may have. Field catalog of recorded data should be prepared by individuals trained in the identification of period historic artifacts of the types likely to be encountered. Any artifacts derived as a result of surface collection or test excavation must be thoroughly documented as to contextual location, brought back from the field, added to the field catalog, analyzed, and curated.

Sections of testing reports dealing with the description and analysis of historical archaeology shall be prepared, or reviewed by qualified historical archaeologists and historians. If the description and analysis of intact or deteriorated structures or

buildings are undertaken as a part of the investigation, the resulting building report and feature forms, and those portions of the resulting report dealing with architecture shall be either prepared or reviewed by an architectural historian prior to finalization. If industrial sites are involved, the advice of a knowledgeable engineer should be sought.

#### CONSIDERATIONS DURING DATA RECOVERY AND MITIGATION ACTIVITIES

As is often the case, some resources will be affected by a proposed undertaking and the significant values of the individual resources must be preserved either through data recovery (if the effect is not adverse) or mitigation (if the effect is adverse). What activities will be undertaken is determined by the nature of the resource, its sphere(s) of significance, anticipated levels and type of impacts, and concerns of the agencies involved. Performance levels and standards are usually determined as a part of negotiations carried out between the archaeologist, the lead agency, and the Nevada SHPO. Consequently, the prescription here of detailed standards is inappropriate. Rather a list of considerations is provided. Historic archaeology research designs should be reviewed in light of these considerations.

- Is the research design in accordance with the Advisory Council's guidelines regarding the Treatment of Archaeological Properties?
- Are key research questions identified for investigation, rather than trivial or vague ones? If research questions are oriented toward issues of site structure or characteristics, are they integrated into a larger perspective that makes them significant?
- Data recovery or mitigation is undertaken due to the significance of the resource. Artifacts and recorded data derived from a significant resource become the



only remaining vestige of that resource. Consequently, the collection and curation of artifacts is necessary. The collection of samples or lots of redundant artifact classes (cans, nails) is allowable as long as an accepted means of ensuring representativeness is applied. Exceptions to this policy must be agreed to in advance by the archaeologist, the administrative agency, and the SHPO.

- Sections of data recovery and mitigation reports dealing with the description and analysis of historical archaeology shall be prepared, or received by qualified historical archaeologists and historians.
- If the description and analysis of intact or deteriorated structures or buildings are undertaken as a part of the investigation, the resulting building report and feature forms, and those portions of the resulting report dealing with architecture shall be either prepared or reviewed by an architectural historian prior to finalization.
- If industrial sites are involved, the advice of a knowledgeable engineer should be sought.
- buildings that are not very significant require documentation with large format, and preferably rectified, photographs showing all sides of the building (usually at least two photos) (see Chambers 1973; Dean 1982). In addition, sketch maps showing relationships among features depicted in the photos are needed, along with narrative historical and descriptive data. For more significant buildings, measured drawings are required, as well.

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## INTRODUCTION

The demand for minerals is increasing and the public lands play an important role in the supply of these resources. New technological developments allow the profitable reworking of areas mined in the late nineteenth and early twentieth centuries. Consequently, contemporary mining operations have the potential to disturb or eliminate historic mining properties and related communities. Since the location of the ore body determines the orientation, avoidance of impacts to any cultural resources is a primary consideration. As a result, there is always a potential for conflict regarding historic mining.

## APPENDIX B:

### THE CORRELATION OF CULTURAL RESOURCE MANAGEMENT AND MINING REGULATIONS

#### THE DEPARTMENT OF AGRICULTURE

The Forest Service is managed through federal law and regulation to manage and protect biological structures in federal ownership. By locally management practices may vary according to the level of mining activity. For example, during exploration activities (the road and power line construction, avoidance is more easily obtained. This alternative becomes less feasible as development progresses and the mining process is implemented.

by  
Arnie Turner and Lynda Armentrout

#### The Mining Laws and Regulations

The General Mining Law of May 10, 1872, provides the statutory right to explore for and develop mineral resources.





## INTRODUCTION

The domestic demand for minerals is increasing and the public lands play an important role in the supply of these resources. New technological developments allow the profitable reworking of areas mined in the late nineteenth and early twentieth centuries. Consequently, contemporary mining operations have the potential of seriously impacting historic mining properties and related communities. Since the location of the ore body dictates the situation, avoidance of impacts to any cultural resources present may not always be feasible. As a result, there is always a potential for conflict regarding historical mining sites.

## THE DEPARTMENT OF AGRICULTURE

The Forest Service is mandated through federal law and regulation to manage and protect historical structures in federal ownership. Obviously, management practices may vary according to the level of mining activity. For example, during exploration activities like road and powerline construction, avoidance is more easily obtained. This alternative becomes less feasible as development proceeds and actual mining and milling processes are implemented.

### The Mining Laws and Regulations

The General Mining Law of May 10, 1872, provides the statutory right to explore for and develop mineral resources:

Be it enacted...That all valuable mineral deposits in lands belonging to the United States...are hereby declared to be free and open to exploration and purchase and the lands in which they are found to occupation and purchase...under regulations prescribed by law, and according to the local customs or rules of miners,...so far as the same are applicable and not inconsistent with the laws of the United States.

The 1872 Act replaced previous laws of 1866 and 1870 which were more restrictive in regard to the number of locations per lode and acreages involved. It further established procedures by which lode and placer claims are to be located, the amount of assessment work required each year, and the method for obtaining patent. Over the succeeding 100 years, at least 71 mining-related acts have been established.

For the purpose of this discussion, the next important piece of legislation is the Surface Resources Act of July 23, 1955. This act allows federal agencies to manage surface resources on unpatented claims whether they were located before or after the act, with some exceptions in regard to claims verified as valid prior to the act.

Any mining claim hereafter located under the mining laws of the United States shall not be used, prior to issuance of patent therefore, for any purpose other than prospecting, mining, or processing operations and uses reasonably incident thereto.

Rights under any mining claim hereafter located...shall be subject, prior to issuance of patent...to the right of the United States to manage and dispose of the vegetative surface resources...and to manage other surface resources thereof...



Except to the extent required for the mining claimant's prospecting, mining or processing operations and uses reasonably incident thereto...no claimant of any mining claim hereafter located...shall, prior to issuance of patent..., sever, remove, or use any vegetative or other surface resources thereof which are subject to management or disposition by the United States.

In reference to the 1872 law, Maley (1983:376) points out that in *United States v. Rissinelli*, 182 Fed 675 (Idaho 1910), it was held that "the phrase 'exclusive enjoyment,' ...means enjoyment of the surface for mining purposes alone..." Other court findings have upheld that the right of "present and exclusive possession" is for the purposes of mining only. The government retains fee title and can manage and protect any resources present (other than the mineral resource). When a property goes to patent, it becomes private in its entirety.

The Forest Service interprets surface rights on claims verified prior to 1955 to include exclusive possession and occupancy for mining purposes, including control of the surface. This requires the Forest to obtain permission from the claimant to cross his land or to harvest timber on the claim. The claimant has the right to cut timber incidental only to actual mining. On claims validated after the 1955 Act, the claimant has right to occupancy and use for prospecting, mining, and processing but not exclusive surface rights. Several other exceptions, like not being able to sell timber cleared for mining purposes, are also stipulated.

Rights of location cover many aspects. A mining claim is property and can be sold, mortgaged, inherited, or transferred. Possessory rights are tied to the deposit of valuable minerals within the claim, and the claimant retains those surface rights necessary for actual mining operations. However, until a patent is issued, the government holds title to the land in fee simple

(Maley 1983:343). Consideration of absolute right of possession was amended by the 1955 Surface Act to allow the government to manage the surface resources, exclusive of minerals.

A significant point is that there must be a discovery before there can be a location. However, in routine day-to-day application, locations are made before discovery, in *pedis possessio*. Miners in the early California districts developed a customary means of dealing with the problem of overstaking by rival claimants. The custom spread and was eventually recognized by the courts. Thus, a claim without a discovery could be held against adverse location through continued actual occupancy as long as the claimant was engaged in proving a discovery. Prediscovery rights do not extend to holding actions against the United States (Maley 1983:348). Continued actual occupancy is not required to hold a claim after discovery. Possessory right of a claim after discovery can be forfeited through abandonment or failure to accomplish annual assessment work.

An abandoned claim breaks possessory title; it cannot then be sold or inherited. It can be relocated. Abandoned property on a claim, with one exception, becomes the property of the United States if not removed within six months of abandonment of the claim. Items of real property attached to the land become the property of the government. If the land on which a structure sits is subsequently located by another claimant, then that locator has the same rights to the structure as he does to other surface rights, and his rights to use the structure must be directly related to actual mining operations on the claim.

...all buildings, camps, and other structures shall be removed within 6 months after completion of mining operations; otherwise they shall become the property of the United States. July 8, 1911, James Wilson, Sec., [ref, FSM 2823.13(8)].



This same situation would apply to such items as mining equipment, which are essentially 'attached' to the land, imbedded and not casually movable. Other items of property abandoned at a claim which are not imbedded and can be moved do not become the property of the government, although the government can assert possession of them. If the government has not done so, then these movable items can be claimed by the first finder regardless of whether or not that finder locates the claim. A new locator of the claim can also assert possession of these items, and use of them does not have to be tied to actual mining operations.

### USDA Surface Management Regulations

Rules and procedures for use of the surface of Forest Service lands under operations authorized by the United States Mining Laws are set forth in 36 CFR 228. These regulations are intended to minimize adverse environmental impacts to surface resources on National Forest lands; they are not for the purpose of managing the mineral resource. Management of the mineral resource is the responsibility of the Secretary of the Interior.

The surface management regulations require that a Notice of Intent to Operate be filed with the District Ranger when a claimant proposes to conduct operations which could have an impact on surface resources. A Plan of Operations will be required if the District Ranger determines that the work proposed in the Notice will cause significant disturbance to surface resources. A Plan need not be filed:

1. if the operations will be along existing public or Forest Service roads;
2. if the proposed work is to search for and occasionally remove small mineral samples;

3. if only small-scale prospecting for removal by nonmechanical means for analysis is planned;
4. if the work only involves marking or monumenting a claim; and
5. if the operation is subsurface through application of tunneling.

A Notice does not need to be filed if a Plan is filed in lieu of a notice, if the work meets the exceptions noted above, or for work which does not involve mechanized earthmoving equipment. Upon receipt of a Notice, the Ranger must notify the operator within 15 days whether or not a Plan is required.

Along with name and legal mailing address of the operator, a Plan must include the following:

1. A map showing proposed area of operations, existing and proposed access routes, and approximate area of surface disturbance.
2. A description of the operations and how they will be conducted, type and standard of existing and proposed roads/routes, means of transportation, period of proposed activity, and what measures will be taken to meet requirements of environmental protection.

Upon receipt of a Plan, the authorized officer has 30 days to review the proposal. By the end of that 30 days, the officer must notify the operator that:

1. The Plan is approved.
2. The proposed work does not require a Plan.
3. Changes or additions to the Plan are necessary to meet the purpose of the regulations.
4. The Plan is being reviewed, but additional time is required, not to exceed 60 days, to complete the review. Reasons why additional time is needed will be



stipulated. Time during which the area of proposed work is not accessible will not be included in the calculation of the additional time.

5. Final approval cannot be given until a final environmental impact statement is completed and filed.

Within the Environmental Assessment (or the Record of Decision for an Assessment) which is normally prepared for a plan of operation, the Forest Service can stipulate mitigating factors which must be accomplished prior to implementing the project. Approval of an Operating Plan is not necessarily a notice to proceed, although it is generally reasonable to allow work to proceed which is not directly related to the stipulations.

#### The Aspect of Cultural Resource Management

Federal law and regulation concerning management of the cultural resource and in particular compliance with Section 106 of the National Historic Preservation Act are quite definitive. There is no question that cultural resources are considered part of the surface resources under agency management.

When contention arises regarding historic properties and mining operations, it is usually tied to whether or not Mining Laws supersede cultural resource laws. The mining industry often contends that consideration of historic properties conflicts with their rights under the 1872 Mining Law, particularly in situations where additional time is required to manage impacts. This is not the case. Wording in the Mining Law is quite explicit: the right to exploration and development must be exercised "...under regulations prescribed by law, and...so far as the same are applicable and not inconsistent with the laws of the United States." Requirements of succeeding environmental laws do not conflict with the rights established in the 1872 Act.

It is interesting that legal findings have in fact pointed out that laws postdating the 1872 Mining Law have precedence over it (U.S. v. Cameron, 252 U.S. 450.). One opinion went further, stating that approval of an Operating Plan could be denied if the proposed work would result in the unmitigated destruction of a significant cultural resource. The reasoning contended that the 1906 Antiquities Act has precedence over the 1872 Act since it was subsequent to it and that the 1906 Act prohibits removal of antiquities without a proper permit. Therefore, such an operation would be in violation of the antiquities law (OGC Opinion, October 15, 1974). Obviously, this assumes discretionary action on the part of the government. It has also been argued that approval of the right to explore and develop is not discretionary, only the method of exercising that right in terms of environmental and surface management regulations.

Management of historic structures on a mining claim falls within the purview of the 1955 Act. The claimant has the right to use such structures only if that use is directly related to actual mining. Such use does not include destruction, nor can it be exercised during work which is of an exploratory nature only. Generally, a claimant is not interested in using older structures for mining related purposes. For most cases, management of these kinds of historic properties remains vested with the government. It is important to bear in mind that real property on a mining claim can be used for purposes of mining only when the property was placed there by a former owner of the claim [FSM 2818.5] and was directly used for mining purposes. For all intents and purposes, this excludes most essential portions of old mining towns which were residential in nature and not incidental to actual mining.

In regards to private lands affected by mining operations, either exploration or development, the agency has the responsibility for considering the effects of the undertaking on



historic properties if any part of the operation falls within the jurisdiction of the agency. This includes the approval, permitting, or funding of any project with portions lying both on federal and private land. For example, if a haul road located on forest land must cross private land at any point, then the effects on private land must be considered. If part of an operation is on forest land, e.g., an open pit mine, and part is on private land, e.g., the mill site, then approval of the entire operation must be based on consideration of the impacts on both the forest and the private lands. Obviously, permission from the private land owner to work on his land must be obtained. However, with the exception of actual location of a mine, the agency could conceivably deny approval of an alternative for location of a mill, waste rock dumps, haul roads, or other ancillary facilities on private lands if the agency is denied the capability of considering the effects on historic properties.

Generally, the Forest Service assumes the responsibility for conducting cultural resource work for small, noncomplex projects. However, there are times when the scheduling proposed for an operation (either exploration or development) is such that the agency could not conduct the work within the time frame. In such instances, the Forest encourages the proponent to use a third party consultant in order to meet the schedule. The Forest also encourages proponents to consider large blocks of his area of interest for inventory and for other aspects of the NEPA process. Although a little more time consuming and costly up front, this approach is ultimately to the advantage of the proponent in terms of timely and effective implementation of the broader aspects of the project. Within this perspective, there are three broad phases of operations:

1. primary exploration;
2. expanded exploration including confirmation and condemnation drilling; and
3. mine development.

The project usually expands rapidly after the first phase and coordination becomes more critical. Any advantage achieved during the first phase is extremely beneficial to both the proponent and the cultural resource.

The Forest Service cannot require the claimant to pay for survey and evaluation costs, but within the concept of a timely framework discussed above, they are usually encouraged to do so. The Forest Service can require the claimant to bear the costs of mitigation related to mining operations under 36 CFR 228. This direction was issued by the Washington Office Director of Minerals and Geology Management in a letter dated June 7, 1983, recognizing the OGC Opinion of 1977. This direction was reaffirmed in a letter from the Director on August 17, 1983.

### Conclusions

Almost without exception, impacts to historic mining areas do occur as a result of renewed mining. The conflicts that sometimes arise in relation to cultural resource management are based in interpretations of law and regulation. Proper management of the situation can result in compatible solutions. A claimant has the right to explore for and develop the mineral resource, but the Forest also has the right and the responsibility to manage surface resources. The early consideration of cultural resources is critical to their proper management and in assisting the claimant through his and the agency's regulatory responsibilities. Largely, insurmountable problems are of our and the claimant's own making. Doing the right thing for all concerned is not impossible, and it is not unreasonable to think that historic properties can be properly managed while allowing the miner to exercise his statutory right. It is simply a situation where time is truly of the essence; this



does not mean that time is limited but rather that the right things need to be done at the right time.

## DEPARTMENT OF THE INTERIOR

It is the policy of the Bureau of Land Management to encourage the orderly development of the mineral resources under its jurisdiction, where such development is authorized. Minerals management is conducted in a manner consistent with the overall, multiple-use management objectives of the Bureau. This management must include cultural resource considerations.

### Classification of Mineral Commodities

For purposes of management, mineral commodities are grouped into three broad categories, based on legislative actions and legal precedents. Each category of minerals is managed by the Federal Government in a different manner.

#### Locatable Minerals

Locatable minerals are those minerals subject to the location of mining claims under the General Mining Laws of 1872. In general, most metallic mineral deposits (gold, silver, mercury, lead, tin, copper, uranium, etc.) and a large number of valuable non-metallic substances (gypsum, borax, fluorspar, perlite, etc.) are included in this category. Specifically excluded are leasable minerals covered under the Mineral Leasing Act of 1920, as amended, and salable minerals defined by the Materials Act of 1947, as amended.

The mining location law authorizes two main types of claims: lode claims and placer claims. Lode claims are used for acquiring mineral deposits that occur in veins or fissures in bedrock. The claim covers about 20 acres and should not exceed 1500 feet x 600 feet. Placer claims are staked in various forms of mineral deposits that are not veins in place. Gold-bearing sand or gravel and non-metallic massive deposits such as perlite and diatomite are located under placer claims. A placer claim can be no larger than 20 acres for an individual, but may be up to 160 acres depending on the number of locators (i.e., 20 acres allowed per locator).

#### Leasable Minerals

Leasable minerals are those subject to leasing from the Government under the Mineral Leasing Act of 1920 and Geothermal Steam Act of 1970. Minerals covered are oil and gas, sodium, potassium, phosphate, coal, oil shale, asphaltic materials, sulfur in Louisiana and New Mexico, and geothermal steam. No permanent rights are acquired from the United States Government, only the right to explore for and mine the specific mineral covered by the lease or permit.

The acquisition of a mineral lease is substantially different from acquiring a mineral deposit by location of a mining claim. Under the mineral leasing laws, permit areas can be much larger than individual claims. Applications for lease or to explore a deposit are reviewed by the Bureau of Land Management District Office. At issue during this review is whether the permit or lease would be compatible with District plans and the development of any stipulations for environmental protection and rehabilitation due to surface disturbance.



Bonds of varying amounts are required as surety for compliance of lease terms, filing fees and annual land rental is paid in advance and royalty is paid to the government on all materials mined. Often, large amounts of money are paid to the government as a bonus in competitive bidding to explore and/or mine leasable minerals. Direct return to the U.S. Treasury from Bureau of Land Management mineral leases far exceeds the return from all other managed resources put together. Even in Nevada where most mineral production comes from locatable minerals, mineral leases provide a substantial part of total receipts from Bureau managed lands.

### Salable Minerals

The Materials Act of 1947, as amended, removes petrified wood, common varieties of sand, stone, gravel, pumice, pumicite, cinders, and some clay from location and leasing. These materials may be acquired by purchase only and are referred to as salable minerals.

District personnel review applications to purchase mineral materials for compatibility with District plans and to develop stipulations for environmental protection and rehabilitation of surface disturbances. Governmental units and non-profit organizations qualify for Free Use Permits of salable mineral materials. The District may also establish Community Pits (which cannot exceed 40 acres) to provide non-exclusive sales of gravel.

### Surface Management Regulations

Under the authority of sections 3219 (30 U.S.C. 22) and 2478 (43 U.S.C. 1201) of the Revised statutes and the Federal Land

Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.), the surface management regulations have been set forth as subpart 3809 of part 3800, Title 43 of the Code of Federal Regulations.

All operators whose project, including access across federal lands, causes a cumulative surface disturbance of five acres or less during any calendar year shall notify the authorized officer (file a written Notice of Intent - N.O.I.) in the appropriate district office. This notice shall be made at least 15 calendar days before commencing operations. Approval of a notice by the authorized officer is not required (3809.1-3[b]). However, if the processing of a notice reveals that cultural resources eligible for inclusion in the National Register of Historic Places may be adversely affected, the agency is directed to:

...notify the operator by telephone and certified mail, return receipt requested. The operator must be advised of the potential conflict and that knowingly disturbing, altering, injuring, or destroying cultural resources is not permitted (BLM Manual 3809.22 A.1 and 43 CFR 3809.2-2(e).

Further decisions by the authorized officer may be subject to compliance with Section 106 of the National Historic Preservation Act (16 U.S.C. 470f)...An operator who refuses to cooperate and who knowingly damages or destroys cultural resources may be subject to a notice of noncompliance or the provisions of 43 CFR 7 or 43 CFR 8365 (BLM Manual 3809.22 A.1).

A plan of operations shall be submitted when the surface disturbance will exceed five acres, or in areas of special designation even though the total acreage is less than five acres. Considerable confusion persists in regard to the role of cultural resource considerations pertaining to approval of mining



plans of operations (3809.1-6). The following information is provided to clarify these concerns. As stated in part (a):

The authorized officer shall, within 30 days of such receipt, analyze the proposal in the context of the requirement to prevent unnecessary or undue degradation...

As part of this consideration, it is the role of the Bureau to comply with cultural resources protection requirements as specified in 36 CFR 800.4. Within this initial 30-day period, the Bureau is committed to perform the tasks described in 36 CFR 800.4(a). This section describes the procedures to be followed for identifying potential or existing National Register quality sites in the proposed area. These procedures include initiating consultation with the State Historic Preservation Officer (SHPO) concerning the existence of known National Register sites (a) (1), the performance of the appropriate level of identification procedures (a) (2), and applying:

...the National Register criteria to all properties that may possess any historical, architectural, archaeological, or cultural value located within the area of the undertaking's potential environmental impact (a) (3).

Although the SHPO has 30 days to respond to each of (a) (1)-(2) and (a) (3), the process can often be significantly compressed using verbal contacts through District initiative so that the 30-day review period in 3809.1-6 (a) may be met. Section 3809.1-6 (a) (3) also allows for an additional 60-day review period if legitimate circumstances warrant it, and states that "days during which the area of operations is inaccessible for inspection shall not be counted when computing the 60-day period." This latter factor would normally be times of snow cover when a field survey has been deemed necessary.

If resources are discovered in the 30 to 90-day review period that are considered significant by the District Office through consultation with SHPO (800.44 [a][3]), avoidance or data recovery options must be considered. If avoidance through plan redesign is impractical and data recovery is selected, then funding and personnel time must be allotted to fulfill that action. Until such a time as this activity is completed, the plan may not be approved, or approved only in part. No time frames are stipulated in the 3809 regulations for consultation with SHPO and the Advisory Council on Historic Preservation. Section 3809.1-6 (a)(5) simply states "that the plan cannot be approved until the authorized officer has complied with Section 106 of the National Historic Preservation Act."

The recovery action should proceed as expeditiously as possible to allow the operator to proceed with the mining operations. Manual Section 3809.22.A.2. states that once a data recovery plan has been adopted and appropriate Section 106 consultations completed, then the Bureau must complete the mitigation measures within 30 days. Acquisition of funding, personnel, and equipment should be anticipated so that this time frame may be met and responsibilities under Section 106 successfully completed. The BLM 4132 program has the responsibility to bear the cost of investigations necessary for identification; salvage costs are normally shared with the 4331 program. Frequently the company initiating the plan of operation or notice is willing to bear a portion of the costs associated with the mitigation. They should be approached with regard to funding as soon as mitigation is anticipated.

### Conclusions

In summary, Section 106 of the National Historic Preservation Act requires that federal officials take into



account the effects of federal or federally assisted undertakings on properties eligible for or included in the National Register of Historic Places, and afford the Advisory Council on Historic Preservation an opportunity to comment. Implementing regulations 36 CFR Part 800 establishes procedures for identifying and taking effects into account and for determining when SHPO and Advisory Council comments are required.

The federal agency responsibilities set out in 36 CFR 800.4 are to be met "before an agency makes a final decision concerning an undertaking." Decision is defined in the regulations as:

...the exercise of or the opportunity to exercise discretionary authority by a federal agency at any stage of an undertaking where alterations might be made in the undertaking to modify its impact.

Undertaking is defined as "any federal, federally assisted or federally licensed action, activity, or program or the approval, sanction, assistance, or support of any non-federal action, activity, or program..."

Clearly, the 3809 regulations recognize that in some cases compliance with Section 106 can be lengthy, particularly when extensive or complex resources must be salvaged prior to commencement of operations. For this reason, no specific overall time frames are established. The general comments prefacing the 3809 regulations states, "indefinite delays beyond the 90-day approval period may occur..when compliance with Section 106 of the National Historic Preservation Act...is required." Obviously, such cases are the exception rather than the rule, and it is imperative that the agency pursue such activities aggressively and completes them in a timely manner. Part 0.22A of the 3809 manual should be consulted for further information and Bureau policy on the subject.

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# APPENDIX C:

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1. Name (Historic): (Current):	
2. Location (Address): (UTM reference):	(elevation):
3. Owner:	
4. Builder/Architect:	
5. Date of Construction:	Alteration:
6. Present Use:	
7. Recorded By: Affiliation: Date:	

APPENDIX D

FIELD FORMS RECOMMENDED FOR USE  
IN CONJUNCTION WITH  
HISTORICAL ARCHAEOLOGY

Sketch of Building  
Floor Plan with measurements:

Sketch of  
Excavation 1: 1944





1. Name (historic):  
(current) :
2. Location (address):  
(UTM reference): (acreage):
3. Owner:
4. Builder/Architect:
5. Date of Construction: Alteration:
6. Present Use:
7. Recorded By:  
Affiliation:  
Date:

## Spatial Organization Data

Floor Plan with measurements:

Photo:

Negative #: Roll:

Comments:

1. Classification (style):
2. Number of Stories:
3. Number of Bays:  
Symmetrical:                      Asymmetrical:
4. Exterior Cladding (principal):
5. Roof  
Shape:  
Chimney Type/Location:  
Eave Treatment:  
Raking Type:  
Dormers:  
Ornamentation:
6. Fenestration (typical)  
Shape:  
Surround:  
(Heads):  
(Sills):  
Number of Lights:  
Window Type:
7. Entry (principal)  
Door Opening (shape):  
Door type:  
Surround:  
Head:  
Sides:  
Architrave:
8. Porches - Location:  
Type:  
Roof:  
Support:  
Ornamentation:



## 9. Additions

Location:

Number of Bays:

Roof Type:

Agency Site Number:

Features of Component Number:

Location:

## Structural Data

1. Overall Type:

2. Foundation

Type:

Materials:

3. Walls

Support System:

4. Roof

Type:

Materials:

5. Additions

Materials:

6. Finishes:

## Social Usage Data

1. Original Use:

2. Subsequent Use:

Comments

## 1. Physical

## Site Plan:

## 2. Historical:

## Sources:



# HISTORICAL ARCHAEOLOGY FEATURE RECORD

## ADMINISTRATIVE INFORMATION

State:

County:

Site Number:

Agency Site Number:

Feature of Component Number:

Location:

Address:

UTM:

Township/Range:

Present Use:

Original Use:

Recorder:

Date:

## PART I. SPATIAL ORGANIZATION

Sketch Map:

Orientation:

Doorway:

Window:

Roofs:

Shade, Covering:

Cornice, Eaves:

Porches, Cupolas, Towers:

Setting:

Description of Landscape or Surroundings:

PART II. CONTEXT DATA:

Physical Setting:

Historical Setting: (note sources)

PART III: ARCHAEOLOGICAL INFORMATION

Associated Structural Features (e.g., foundations):

Associated Setting Features (e.g., landscape features):

Associated Occupancy Features (e.g., storage pits inside the building):



#### PART IV. STRUCTURAL SYSTEM

Overall Type:

Foundation:

Type:

Materials:

Walls/Support System:

Roof:

Type:

Materials:

Additions:

#### PART V. ARCHITECTURAL INFORMATION

Description of Exterior

Dimensions:

Porches, Stoops, Balconies, Bulkheads:

Chimneys:

Openings:

Doorways:

Windows:

Roof:

Shape, Covering:

Cornice, Eaves:

Dormers, Cupolas, Towers:

Setting

Description of Landscape or Streetscape:

Outbuildings:

Description of Interior:

Floor plan:

Stairways:

Flooring:

Wall and ceiling finish:

Openings

Doorways and doors:

Windows:

Decorative Hardware and Trim:

Mechanical equipment

Lighting:

Plumbing:

Other:

## PART VI. INTERPRETATIONS:

## PART VII. PHOTOGRAPHS: (note negative and roll numbers)



# HISTORICAL ARCHAEOLOGY DEBRIS SCATTER RECORD FORM

## ADMINISTRATIVE INFORMATION

State: \_\_\_\_\_ County: \_\_\_\_\_  
 Site Number: \_\_\_\_\_  
 Agency Site Number: \_\_\_\_\_  
 Feature of Component Number: \_\_\_\_\_  
 Type of Feature: (surface scatter, pit fill, etc.) \_\_\_\_\_

### Location:

Address: \_\_\_\_\_  
 UTM: \_\_\_\_\_  
 Township/Range: \_\_\_\_\_

Recorder: \_\_\_\_\_

Date: \_\_\_\_\_

## PART I. SPATIAL ORGANIZATION

### Sketch Map:

Associated Setting Characteristics:

Associated Features:

Dimensions:

Approximate Density:

Tableware:

[illegible]

Other Ceramic Artifacts:

Glass:

Window Glass: (note thicknesses)

Bottle Glass:

[illegible]

Buttons:

Other Glass Artifacts:

Metals:

Nails:

[illegible]



Other Fasteners:

Cartridges: (note size, material, and headstamp)

Cans:

Type	Size	Opening Method	Function Content	Marks	Number

Buttons:

Other Metal Artifacts:

Bone:

Food Waste:

Buttons:

Other Bone Artifacts:

Fabric:

Wood:

Leather:

Rubber

Stone/Brick:

Plastic:

Other Artifacts:

PART III. ASSOCIATIONS

Evidence of Ethnic Affiliations:

Probable Date Range:

PART IV. INTERPRETATION

PART V. PHOTOGRAPHS/DRAWINGS



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